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Body Image Projective Test¹

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The purpose of this study was to investigate a dimension of body image, as primarily oriented to visual perceptions of height, conformation and proportions of the body. The assumptions were: people have a conceptual body image which is both conscious and unconscious; much of the body image concept is anchored in the visual percepts about the conformation of the person's own body; unconscious aspects of a body image may be important since these are emotionally oriented.

The problem was to develop a body image projective test for young women and to explore the relationship of data from this test with data obtained through an objective rating scale. The Body Image Projective Test was based upon the following criteria: (1) ease of administration to large groups and subject to machine tabulation, (2) manual dexterity or drawing skill not required, (3) element of free choice presented yet objectivity of forced choice maintained, (4) purpose of test concealed from subjects so that choices reflect unconscious aspects of body image. The Objective Rating Scale was based upon the same factors of height, conformation and body proportion as in the Body Image Projective Test.

The procedure was to administer both the Body Image Projective Test and the Objective Rating Scale to the same subjects, (1) to determine the reliability of each test, and, (2) to correlate the data of the two tests to determine whether these measured the identified aspects of the body image.

Body Image Concept

The disciplines of psychology, neurology and psychiatry recognize the role of body attitudes and feelings in behavior and in personality. Evidence from clinical and experimental investigations has given structure to the theoretical construct, the body image. From the sensations of the body and the perceptions concerning the body which result from the experiences of living, body image is developed and modified by the value system of a society. Savage (1955), Schilder (1935), Hammer (1958). Images are not isolated unrelated pictures but become organized into a gestalt for each person that distinguishes and unites the inner and outer world. Bender (1952). Although the picture one holds of his body develops and integrates in stages, it is never static. It changes as the result of new experience. Head (1920), Schilder (1951). In time, the body image becomes selective of experiences and within experiences in a direction which complements the image. Schilder (1935). The person's concept of his body affects his opinions of his personality and his relations with others. Garrett (1945), Schilder (1935).

"The body image is a term which refers to the body as a psychological experience, and focuses on the individual's feelings and attitudes toward his own body. It is concerned with the subjective experiences with his body and the manner in which he has organized these experiences." Fisher (1958).

Body Image Evaluation

While the major problem in human sciences is to prove what is thought to be true, the evaluation of concepts is particularly perplexing. Hammer (1958). Methods currently

¹Research Grant, Research Committee, Academic Senate, University of California, Los Angeles, California.

used to determine the concept of body image encompass clinical observation; human figure drawing, identification, and selection tests; word association tests; and other projective techniques.

The human figure drawing tests or the Draw-A-Person Test have been widely used with children to obtain the projection of their own images. Machover (1949). Goiten and Brown added another dimension with the instruction to draw your figure, your body in outline in space as viewed from the back and the side, feeling your way around the body with both hands. Brown (1943). Tait and Ascher sought to get at other qualitative aspects of a body image by Inside-of-the-Body Test in which the person was asked to draw an inside view of the body and label the organs. Tait (1955). A direct approach to the meaning of parts of the body in the total body scheme was taken by Katcher and Levin. Children were instructed to associate silhouette parts of the body with their parents. Katcher (1955). Deno took black and white nude back view body silhouette pictures of adolescent boys in the same class. Each boy was later asked to identify his own picture and those of the other boys. Deno (1953). While using distorting lenses adults were asked to determine the degree and areas of the body distorted in themselves, in other adults, children and amputees. Wittreich (1955). Bender sought to determine the value of parts of the body by simultaneously facing a person with two different parts of the body and questioning as to relative value. Bender (1952).

Secord attempted to discover the degree or intensity of concern about body parts by requesting that persons associate with words selected as having some relationship to parts or functions of the body. Secord (1953). Value judgments concerning body parts and physical capacities were studied by Curran and Levine through a questionnaire of ninety-six questions developed from the writings of Schilder.

Curran (1942). Fisher and Cleveland sought to measure the degree of definiteness of body image boundaries by developing a word association test. Responses were categorized as to barrier and penetration of boundary responses relating to the surface of the body. Findings were correlated with responses from the Rorschach, TAT, and figure drawing tests. Fisher (1958). Numerous writers have commented about body image from the analysis of responses from the TAT, Rorschach, and House-Tree-Person projective tests. Fisher (1957).

Each of these tests was devised to obtain specific information concerning some aspect of the body image. No one test purports to examine the total image. The value of tests which are based upon drawing the human figure may be limited by the drawing proficiency of the subject, Woods (1954), by the judgment of the examiner, and by the validity of criteria for judgment. Projective test responses probably give qualitative data concerning an individual body image concept, but the responses are valuable only as interpreted by an expert. Drawing tests are more useful with children than adults because adults are more hesitant apparently to draw unless they have skill. Hammer believes that other projective techniques are more useful with adults since they have more sophisticated defense layers concealing their basic needs. Hammer (1958).

No tests were discovered in which the stimulus was visually oriented that did not require drawing skill, or in which an intensity of feeling about the body schema could be numerically scored that did not require expert judgment, which could be administered to large groups, and which could be standardized and norms determined.

Design of Body Image Projective Test

A nude female anterior silhouette of average height and average body contour was prepared. This "normal

silhouette" was declared as 5'5" in height. From the proportions of the "normal silhouette" a second silhouette was drawn and scaled to a tall silhouette of 5'9" in height with average contour, and a third silhouette was drawn and scaled to a short silhouette of 5'1" in height with average contour. Using the short and tall silhouette models, four more silhouettes were drawn; two, in which the body contour was thick and two, in which the body contour was thin. There were seven original anterior drawings: a normal height, normal contour; a tall height, normal contour; a short height, normal contour; a tall height, thin contour; a tall height, thick contour; a short height, thin contour; and a short height, thick contour. Each of these seven original anterior silhouettes were subsected into parts composed of arms, torso, and hips-legs. At random the parts were recombined into every possible combination to provide 73 new silhouettes plus the original 7 silhouettes for a total of 80 silhouettes.

Four anterior silhouettes were then selected at random and placed upon one page. If the same length and contour of a single area appeared more than twice on any page another random selection was made. In the final form, each page of four pictures contained no more than two of the same length and contour of any single area. Each page was duplicated once and the pages were assigned numbers at random so that the one duplicate was separated by at least twenty pages from the other duplicate.

A nude female lateral silhouette of average height and average body contour was drawn. From this "normal silhouette" view two additional silhouettes were drawn: one, in which the contour was thick; and one, in which the contour was thin; height was held at 5'5". Three original lateral drawings were prepared; a normal height, normal contour; a normal height, thick contour; and a normal height, thin contour. Each of these

original lateral drawings was subsected into parts comprised of shoulders, breasts, abdomen, and hips-legs. The parts were recombined at random into every possible combination to provide 81 silhouettes in addition to the three original silhouettes for a total of 84 silhouettes.

Four lateral silhouettes were then selected at random and placed upon one page. If the same contour of a single area appeared more than twice on any page another random selection was made. In the final form each page of four pictures contained no more than two of the same contour of any single area. Each page was duplicated once and the pages were assigned numbers at random so that the one duplicate page was separated by at least twenty-one pages from the other duplicate page.

On each page of both anterior and lateral silhouettes the four figures were identified as A.B.C.D. consecutively from left to right. The lateral views appeared on pages 1 to 42 and the anterior views from pages 43 to 82 in a ring bound booklet.

Administration of Body Image Projective Test

One-hundred freshman and sophomore women were selected at random from those enrolled in physical education classes at the University of California, Los Angeles. These women represented an age span from seventeen to twenty-three years and a wide sampling of majors in all colleges within the University. Subjects were without gross physical defects or abnormalities.

The Body Image Projective Test was administered to the group during a one-hour physical education class period. Each subject was given a separate booklet containing the silhouette pictures. Instructions were to answer for each page the following questions: "What looks most like me?", "What I would least like to look like?", and "What I would most like to look like?". Letters designating the figure



A



B

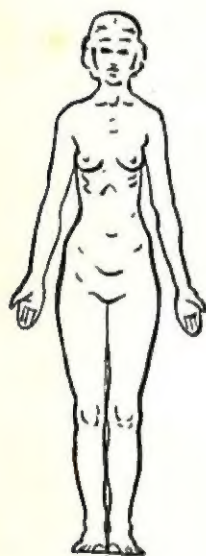


C



D

17



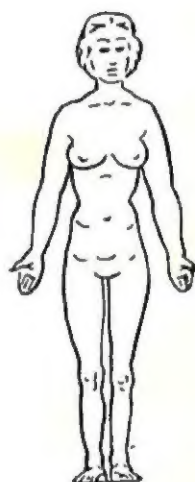
A



B



C



D

44

SAMPLE PAGES
BODY IMAGE PROJECTIVE TEST

which best answered each question were recorded on an individual answer sheet. A single picture on each page could be selected to answer one or all of the questions, or three different pictures could be selected. The subjects were not told the purpose of the test.

Subjects completed the test in the one-hour period. Following scoring

many subjects asked about the purpose of the test. Most subjects stated that they enjoyed the test as they found the pictures of themselves or of friends and they found pictures that they would like to look like. Several subjects expressed frustration in making selections, and one refused to take the test because of what it might re-

veal. Data reported were derived from the answer sheets of fifty randomly selected subjects.

Discussion of Body Image Projective Test

Emphasis in this test was placed upon what the subjects think about their body image rather than upon the reality of their body image. It was believed that a subject's opinion about her body, and what she wanted or didn't want, could provide insight into important aspects of the body image. Therefore, no attempt was made to measure or take pictures of the actual body of a subject in order to test the objectivity of the test responses.

The combination of body parts selected was determined on the basis of experience with young women in situations involving physical therapy, physical activity, and figure control. Since students placed most stress on body proportions and body conformation these were chosen as the variables and were altered as short, normal, or tall, and as thin, normal, or thick.

Although each subject had a forced choice on each page, it was believed that, through factor analysis of the data from the large number of selections within the test, the most dominant aspects of body image would be revealed and that factor analysis of the likes and dislikes would cast light upon feelings about the body image.

As a result of working with the data several figure inaccuracies were found. It was noted that the crest of the ilium in the thin hip-leg anterior silhouette

was prominent and high. Such pelvic bony structure is more representative of the deep pelvis with high hip flare of the male body rather than the broad low hip flare of the female. On the lateral silhouettes the large breasts did not appear to be sufficiently larger than the normal breasts. The length of arms, anterior view, were drawn in relation to the length of the torso. Occasionally this distorted the body appearance when a short torso was placed on a long hips-legs or a long torso was placed on short hips-legs. Probably the length of arms is more related to length of legs than to length of torso.

The effect of these figure inaccuracies on the data is not known. Although the length of arms may have little direct effect upon an image, the over-all picture of arms hanging mid-thigh or at hip level may have influenced subject selection. The lack of size in large breast distortion would not affect the internal reliability of the test but it may limit the range of selection of breast size.

Design of Objective Rating Scale

To test the hypothesis that the results of the Body Image Projective Test displayed unconscious elements of an image, an objective rating scale was developed using the same body parts, proportionate lengths and distortions. For each body part subjects were asked to check the column—less than normal, normal, or more than normal—that best represented their present body contour. It was assumed that each subject had an idea of nor-

OBJECTIVE RATING SCALE

Body Parts	Less than Normal	Normal	More than Normal
Torso Length			
Hips-legs Length			
Torso Breadth			
Hips-legs Breadth			
Arm Breadth			
Chest thickness (not breasts)			
Breasts Size			
Abdomen Size			
Hips-legs Size			

TABLE I. Reliability Correlation Coefficients* First and Second Trials
Body Image Projective Test

	"What Looks Most Like Me"	"What I Would Least Like to Look Like"	"What I Would Most Like to Look Like"
<i>Anterior View</i>			
Hips-legs breadth	.955	.810	.723
Torso breadth	.812	.879	.679
Arm breadth	.904	.985	.843
Hips-legs length	.822	.695	.748
Torso length	.932	.958	.868
<i>Lateral View</i>			
Shoulder breadth	.917	.750	.710
Abdomen	.959	.946	.920
Hips-legs breadth	.959	.904	.873
Breasts	.839	.865	.870

*All coefficients significant at the .01 level of confidence.

mal and of deviations above or below normal, and further, that deviations above or below normal represented thin or thick, short or tall. Therefore the terms, less than normal, normal, and more than normal were used in the rating scale.

It was assumed that the Body Image Projective Test and the Objective Rating Scale explored the same factors of body image. The Objective Rating Scale was administered on two occasions to the same group at an interval of two months.

Treatment of Data

Responses on each page of the Body Image Projective Test, for each of the three questions, were compared to responses on the duplicate page. Length and contour of body parts for the chosen figures were tabulated. Deviations were recorded from 0 to 2, with a possible range of 3. Reliability correlation coefficients were determined. (Table I)

The length and contour of body parts chosen in the first and second trials of the Objective Rating Scale were tabulated. Deviations were recorded from 0 to 2, with a possible range of 3. Reliability correlation coefficients were determined. (Table II)

The total choices of lengths and contours of body parts comprising figures in the Body Image Projective Test were correlated with the total of choices of length and contour of

TABLE II. Reliability Correlation Coefficients* First and Second Trials
Objective Rating Scale

	"What I Look Like"
<i>Anterior View</i>	
Hips-legs breadth	.882
Torso breadth	.968
Arm breadth	.770
Hips-legs length	.992
Torso length	.924
<i>Lateral View</i>	
Shoulder breadth	.845
Abdomen	.953
Hips-legs breadth	.898
Breasts	.903

*All coefficients significant at the .01 level of confidence.

TABLE III. Inter-Correlation Coefficient of Body Image Projective Test^a with Objective Rating Scale^b

	"What Looks Most Like Me" ^a with "What I Look Like" ^b
<i>Anterior View</i>	
Hips-legs breadth	.282
Torso breadth	.139
Arm breadth	.104
Hips-legs length	.251
Torso length	.314
<i>Lateral View</i>	
Shoulder breadth	.310
Abdomen	.396*
Hips-legs breadth	.397*
Breasts	.319

*Significant at the .05 level of confidence; other coefficients not significant.

body parts in the Objective Rating Scale. (Table III)

Pearson Product Moment correlations were obtained on total scores of fifty subjects; correlations were corrected for grouping errors. Levels of confidence were noted in order to establish significance of the correlation coefficient. Nonparametric methods also were utilized but yielded similar results.

Discussion of Data

Individual data revealed four patterns of reliability: (1) high reliability on anterior view with low reliability on lateral view; (2) high reliability on lateral view with low reliability on anterior view; (3) low reliability on both views, and (4) high reliability on both views.

Intensity of feeling as to body part distortion may be inferred from the range of discrepancy between "What Looks Most Like Me", "What I Would Most Like to Look Like", and "What I Would Least Like to Look Like". Profiles of the responses of individual girls and the group presented interesting and varied patterns.

Studies underway using the Body Image Projective Test are: interpretation of the profiles, test standardization, exploration of image profiles with other body image and personality tests, and the development of similar tests for children and young men.

Among questions raised in connection with the data of the Body Image Projective Test were, (1) Is choice consistency evidence of the most secure body image? (2) Is "What Looks Most Like Me" similar to "What I Would Most Like to Look Like", and dissimilar to "What I Would Least Like to Look Like"? (3) Does the "least like" question call forth more intense feelings than does the "most like" question? (4) Is the degree of reliability of the image related to stability of personality? (5) Is the mode of visual perception, field dependent versus field independent, a factor in the response? (6) Is right-left lateral perception a consideration in the response of those subjects who differ in

reliability on lateral and anterior views? (7) Is there a discernable relationship between the body image as determined by the Body Image Projective Test and human movement behaviors as determined by the Hunt-Weber Movement Observation Scale?

Comparison of data from the Body Image Projective Test and Objective Rating Scale presented the following question. Is it possible that the terms, more than and less than "normal," of the Objective Rating Scale were construed by the subjects as abnormal and the visual distortions of the Body Image Projective Test construed as differences within the range of normal?

Findings

1. The Body Image Projective Test is reliable as a total test and for separate items.
2. The Objective Rating Scale is highly reliable.
3. Relationship between the scores on the Objective Rating Scale and the Body Image Projective Test is not significant at the .01 level of confidence. With exception of abdomen and hips-legs breadth, lateral view, relationships of other scores were not significant at the .05 level of confidence.
4. In the absence of a significant correlation in 7 of the 9 body part factors between the question "What Looks Most Like Me" on the Body Image Projective Test and "What I Look Like" on the Objective Rating Scale, it appears that either the two tests inherently differ or that they measure different aspects of the body image.

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Some Effects of Set and Stimulus Properties on TAT Stories^{1, 2}

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The series of investigations initiated by Fosberg's study (1941) demonstrated the sensitivity of the Rorschach Test to various situational factors including S's attitude toward the test (Hafner, 1958). Weisskopf and Dieppa (1951) found that attitude also is an important determinant of TAT response. During this same period the importance of the stimulus as a determinant of TAT response was recognized (Murstein, 1959).

The increased use of the TAT in both research and in clinical practice as well as the complexity of TAT response attest to the importance of further investigations of the role of attitudinal and stimulus factors in TAT response.

The present investigation assumes that expectation of reinforcement is as important a determinant of behavior in the testing situation as it is in other interpersonal situations (Rotter, 1954), i.e., Ss behave in a manner which they believe will maintain or enhance their self-esteem. Therefore, in this study the S's expectation of reinforcement is manipulated. By means of prestige-suggestion spurious information is given to Ss concerning the important bi-polar behavioral disposition spontaneity-individuality vs. constraint-conformity. The experimental design permits the investigation of these sets as they interact with TAT cards whose stimulus properties

tend to elicit the expression of two important socially conditioned drives, sex and aggression.

METHOD

The experiment has the form of a 3x2 factorial covariance design with three set conditions (Inhibiting, Neutral, and Facilitating), and two stimulus conditions (Sex and Aggression). The six conditions were randomly assigned to 60 subjects. Thus six groups of 10 subjects each were formed.

Subjects. Sixty subjects (Ss) were randomly selected from the population of white, male freshmen of a large eastern university. The age range of subjects in each condition was from 18 to 23 with almost identical means and standard deviations.

Stimuli. TAT cards with which to constitute the two stimulus conditions were selected by inspection of the data of a previous investigation (Leshner, 1957). By this method two cards which had elicited the highest sexual expression relative to aggressive expression, 2 and 19, were selected for the Sexual Condition; the two cards which had elicited the highest aggressive expression relative to sexual expression, 8 BM and 20, constituted the Aggressive Condition; and the two cards which had elicited low sexual and low aggressive expression, 5 and 7BM, were chosen as the Adjusting Cards.

Set. The three attitudinal set conditions were represented by differential instructions which sought by means of prestige-suggestion either to facilitate or to inhibit response. The two experimental groups received identical instructions except for the following key statements:

For the response-facilitated group, "We know . . . that if you give these cards to

¹ This article derives from part of a dissertation submitted to the faculty of the Graduate School of Pennsylvania State University in partial fulfillment of the requirements for the Ph.D. degree in Psychology. I wish to thank Dr. Leon Gorlow and Dr. William S. Ray, chairman and co-chairman respectively of my dissertation committee, for their guidance and encouragement.

² A part of this paper was read at the Midwestern Psychological Association meeting, Chicago, 1959.

well-adjusted, mature, normal people and ask them to create a story, they tell a story that shows they use their imagination to enrich their thinking. They make free use of their imagination as it is stimulated by the picture. They take pride in using their imagination to be as different from other people as they can."

For the response-inhibited group, "We know . . . that if you give these cards to well-adjusted, mature, normal people and ask them to create a story, they tell a story that shows that they are the master of their imagination and their feelings. They give the sort of story that would be given by any other well-adjusted, mature, normal person."

A third group (Neutral) received instructions equivalent in length but designed not to influence attitude.³

Dependent Measures. (1) *Response Time.* The number of seconds between the presentation of a card and the beginning of S's response was recorded to the nearest second by means of a Mylan, Type 15 stopwatch. (2) *Productivity.* [a] The free response count consisted of the number of words from the beginning of the story until E's standard question, "Can you tell me anymore about it?" [b] The inquiry count consisted of the number of words from E's standard question until the end of the story. (3) *Creativity.* This was measured by a global rating on a five-point scale which ranged from one (very ordinary, very commonplace) to five (very creative, very unusual, very original). (4) *Sexual Expression.* This was measured by a global rating on a six-point scale which ranged from zero (no overt expression of sex) to six (maximal overt expression of sex). (5) *Aggressive Expression.* This was measured by a global rating on a six-point scale which ranged from zero (no overt expression of aggression) to six (maximal overt expression of aggression).

³ The complete instructions, the rating scales and the instructions to the raters have been deposited with the American Documentation Institute. Order Document No. 6158, remitting \$1.25 for 35 mm. microfilm or for 6 by 8 in. photocopies.

Experimental Procedure. Each of the six conditions was completed before any condition was used again. The order of presentation within each set of six conditions was random. Each set of conditions was repeated 10 times so that a total of 60 Ss was used. All Ss were tested individually by the writer.⁴

S was told that he was participating in an investigation of perception. Standard TAT instructions (Murray, 1913) were read and the tape-recorder was turned on.

Card number five, the first adjusting card, was then presented. When S indicated that he had completed his story, he was asked, "Can you tell me any more about it?" His next indication of completion was accepted. (this procedure of questioning was followed at the appropriate point on each card). S's total response to the first adjusting card constituted the first adjusting story.

Card number 7BM, the second adjusting card was then presented.

At the end of S's response to the second adjusting card, the tape-recorder was turned off and the adjusting cards were removed. The experimental instruction appropriate to the randomized condition which was due at that session was read. The tape-recorder was turned on and the two test cards which were appropriate to the randomized condition due at that session were administered.

The cards were presented in a standard order. The adjusting cards were presented to all 60 S's in the order: 5 and 7BM. The sex cards were presented in the order: 2 and 10. The order of the aggression cards was: 8BM and 20.

Rating Procedure. All stories were transcribed, duplicated and coded. Three judges, each of whom had at least one year of clinical experience with the TAT, each rated the 240 stories for aggressive expression before

⁴ At the beginning of the session, S wrote for five minutes to each of three self-descriptive questions. The analysis of these data is not presented in this report.

TABLE I—Correlations Among the Dependent Measures: Sexual Expression, Aggressive Expression, Response Time, Creativity, Free Response Word Count, and Inquiry Word Count (N = 60)

Variables	Sexual Expression	Aggressive Expression	Response Time	Creativity	F.R.W.C. ^a	I.W.C. ^b
Sexual Expression204	-.037	.429*	.325*	.259
Aggressive Expression	129	.491	.289*	.253
Response Time				-.033	.056	-.054
Creativity			241	.341*
Free Response Word Count						.197
Inquiry Word Count						

* Significant at the .05 level.

^a F.R.W.C. = Free Response Word Count

^b I.W.C. = Inquiry Word Count

rating the stories for sexual expression. Two judges rated the creativity of the stories. The stories were thoroughly scrambled before presentation to the judges.⁵

Statistical Analysis. Separate analyses of covariance were conducted on all dependent variables except sexual expression. The sexual expression measure was submitted to analysis of variance because for this variable the regression of the test measure on the adjusting measure was not significant. Further analysis of the nature of the relationship among the set conditions was made in those cases where the overall analysis indicated a significant effect for the set variable.

The statistical analyses were conducted on the summed scores on each dependent measure for the two cards in each condition.

RESULTS

Reliability of ratings of sex, aggression, and creativity. The mean product moment correlation among the raters for sexual expression was .89, for aggressive expression .84, and for creativity .46.

Relationships among the dependent measures. Table I presents the rela-

tionships among the dependent measures. These product-moment correlations represent the overall correlation which is based on the within group variability. The variables are obviously not independent. However, it should be noted that response time is not significantly related to any of the other dependent variables.

The effects of set and stimulus properties. Inspection of the means for the sexual expression, aggressive expression, and creativity measures indicated that set as defined in this study is an ordered variable.

Table II presents a summary of the six main analyses of the effects of set and stimulus properties on selected aspects of TAT response. Except in the case of the sexual expression measure, which was analyzed by means of analysis of variance, these are summaries of the analyses of covariance.

The composite summary presented in Table II indicates that set, stimulus properties, and the interaction of set and stimulus properties did not produce statistically significant effects on the response time, free response word count, or inquiry word count measure.

It can be seen that set and stimulus properties produced statistically significant effects on sexual expression and aggressive expression. Set but not stimulus properties produced a significant effect on the creativity of the stories. The low reliability of the crea-

⁵ The writer is indebted to the following persons who served as raters: Herman Lerner, Byrna Levine, George Middleton, and John Wilson.

TABLE II—Composite Summary of Separate Analyses of the Dependent Variables*

Dependent Variables	Source of Variability	F
Response Time	Set Conditions	0.84
	Stimulus Conditions	0.82
	Set X Stimulus Conditions	0.93
Free Response Word Count	Set Conditions	2.62
	Stimulus Conditions	0.38
	Set X Stimulus Conditions	1.37
Inquiry Word Count	Set Conditions	1.90
	Stimulus Conditions	0.17
	Set X Stimulus Conditions	0.32
Creativity	Set Conditions	11.17*
	Stimulus Conditions	1.71
	Set X Stimulus Conditions	0.30
Sexual Expression	Set Conditions	5.32*
	Stimulus Conditions	18.03*
	Set X Stimulus Conditions	4.85*
Aggressive Expression	Set Conditions	4.82*
	Stimulus Conditions	19.92*
	Set X Stimulus Conditions	2.00

* The Sexual Expression measure was submitted to analysis of variance because the regression of the test cards on the adjusting cards was not significant for this variable. All other measures were submitted to analysis of co-variance.

* Significant at less than the .05 level.

TABLE III—Analysis of Covariance of Creativity Ratings

Source of Variability	Sums of Squares	df	Mean Squares	F
Set Conditions	180.4111	2	90.2055	11.17*
Linear Component	175.1105	1	175.1105	21.68*
Quadratic Component	4.8746	1	4.8746	.60
Stimulus Conditions	13.8066	1	13.8066	1.71
Interaction	4.8913	2	2.4456	.30
Within Groups	428.0209	53	8.0759	
Total	628.5309			

* Significant at less than the .05 level

TABLE IV—Analysis of Variance of Sexual Expression Ratings

Source of Variability	Sums of Squares	df	Mean Squares	F
Set Conditions	298.0333	2	149.0167	5.32*
Linear Component	297.0250	1	297.0250	10.62*
Quadratic Component	1.0083	1	1.0083	.03
Stimulus Conditions	504.6000	1	504.6000	18.03*
Interaction	271.3000	2	135.6500	4.85*
Linear Component	265.2250	1	265.2250	9.48*
Quadratic Component	6.0750	1	6.0750	.00
Within Groups	1511.0000	54	27.9815	
Total	2584.9333			

* Significant at less than the .05 level

tivity measure could have obscured possible significant stimulus and/or interaction effects. The interaction between set and stimulus properties produced a statistically significant effect

on the sexual expression measure but the interaction of these two factors was not significant for the aggressive expression measure.

Tables III, IV, and V present sum-

TABLE V—Analysis of Covariance of the Aggressive Expression Ratings

Source of Variability	Sums of Squares	df	Mean Squares	F
Set Conditions	280.8486	2	140.4243	4.82*
Linear Component	246.6514	1	246.6514	8.46*
Quadratic Component	33.3189	1	33.3189	1.14
Stimulus Conditions	580.5938	1	580.5938	19.92*
Interaction	116.6782	2	58.3391	2.00
Within Groups	1544.7160	53	29.1456	
Total	2511.7911			

* Significant at less than the .05 level

maries of the individual analyses of the creativity, sexual expression, and aggressive expression measures.

The additional analyses of the set variable presented in Tables III, IV, and V and the analysis of the interaction between set and stimulus properties on the sexual expression measure presented in Table IV indicate that these effects were essentially linear.

DISCUSSION

The findings indicate that the sexual expression, the aggressive expression, and the creativity of TAT stories are significantly affected by S's expectation of reinforcement in the testing situation. This supports and extends the findings of Weisskopf and Dieppa (1951) as to the influence of attitudinal factors on TAT response.

The significant effect of the stimulus properties of the cards on sexual and aggressive expression can be taken as a confirmation of the method by which these cards were selected. However, these findings also emphasize the point made by other writers (Murstain, 1959; Eron, 1948; Eron, 1953) that important dimensions of TAT response are determined by the stimulus configurations of the cards.

For the clinical psychologist the evidence indicates the danger in attributing the variance in such story dimensions entirely to personality factors without considering S's attitude toward the test or the data characteristically elicited by the individual TAT cards. The issue is all the more critical in that clinical psychologists make im-

portant inferences concerning psychological status on the basis of S's expression of sexual and aggressive drives during the testing situation.

The significant interaction between set and stimulus factors on sexual expression but not on aggressive expression could be due to the fact that the stimuli in the two conditions were not equivalent in intensity. An alternative explanation might be found in the differential cultural conditioning of the sexual and aggressive drives in the population employed. A definitive answer would require an experiment with refinements in both stimulus and subject control.

The fact that these story changes occurred without concomitant changes in response time or productivity raises practical and theoretical problems for further investigation. The clinical psychologist frequently uses response time and productivity cues as collateral data from which to deduce S's attitude toward the test, e.g., the "guarded" or "spontaneous" protocol. The fact that these two measures were not significantly affected and the fact that response time was not significantly related to any of the other measures used in this investigation would suggest caution in using them as indices of attitude. Support for this view comes from the work of Solkoff (1959) who also found little or no relationship between instructions and response time or productivity. Perhaps a conservative view would be that all Ss engage in some form of self-instruction before responding and that such direc-

ting tendencies as were embodied in the instructions employed in this investigation required no unique alteration of existing tendencies. Controlled investigation would be needed to throw light on this question.

Research in progress takes into account two additional aspects of the problem studied here. One phase will explore the effects of experimentally altered TAT stories on selected aspects of clinical judgment. The other phase will seek to establish some of the personality correlates of acceptance or non-acceptance of the prestige-suggestion employed in this study.

SUMMARY

In order to investigate the effects of set and stimulus properties on TAT response, a sample of 60, white, male freshmen were randomly selected and tested in a 3x2 factorial covariance design. Stimulus conditions consisted of two TAT cards which elicit sexual expression and two TAT cards which elicit aggressive expression. Adjusting measures for the covariance analyses were obtained from the administration under standard instructions of two TAT cards which elicit low sexual and aggressive expression. Sets were produced by differential instructions which sought by means of prestige-suggestion either to facilitate or to inhibit response. One group was told that spontaneity and individuality of stories were indicators of good adjustment and maturity; the other experimental group was told that constraint and conformity were indicators of good adjustment and maturity. A third group received neutral instructions.

The dependent variables were (a) response time, (b) productivity (two word counts), (c) creativity, (d) sexual expression, and (e) aggressive expression.

Three judges rated the 240 stories on a six-point scale for aggressive ex-

pression ($r=.84$), on a six-point scale for sexual expression ($r=.89$), and two judges rated the stories on a five-point scale for creativity ($r=.46$).

Analyses revealed that: (1) set and stimulus properties produced statistically significant effects on sexual expression and aggressive expression, but not on response time or productivity; (2) set but not stimulus properties produced a statistically significant difference in the creativity of the stories; (3) the interaction of set and stimulus properties produced a significant effect on sexual expression but not on aggressive expression, creativity, response time, or productivity.

Some of the implications of these findings for the clinical testing situation and for future research were discussed.

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Passive and Aggressive Responses to the Rorschach by Passive-aggressive Personalities and Paranoid Schizophrenics¹

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PROBLEM

The term Passive-aggressive Personality first appeared in a diagnostic nomenclature in 1945 (Nomenclature, 1945) and in 1952 the American Psychiatric Association adopted the term (Manual, 1952). Despite a respectable age of 13 years, the Passive-aggressive Personality has so far received scant attention in the literature (e.g., Hodge, 1955; Singer & Shaw, 1957; Whitman, et al., 1954).

The aim of the present study was to determine whether groups of individuals classified as passive-aggressive personalities differed in terms of Rorschach responses from one subtype of this disorder to another and from a group of Paranoid schizophrenics. The latter group was used as a comparison group because it has been observed that at least one type of the passive-aggressive personality becomes schizophrenic and paranoid as their inability to adjust to life increases (e.g., Noyes, 1953).

The terms used in this classification become rather unwieldy in discussion. For convenience PAP will refer to the Passive-aggressive Personality group as a whole, and the three sub-classifications will be referred to as D-type (Passive-dependent), PA-type (Passive-aggressive), and A-type (Aggressive).

Since formal theoretical statements concerning the PAP are lacking, the assumption of this study was simply that the Rorschach, as a sample of behavior, would reflect the same type of behavior habitually used by the in-

dividual in other situations. Further, and by definition, it was hypothesized that the A-type would give significantly more aggressive responses than the other types, that the D-type would give significantly more passive responses, and the PA-type would fall somewhere in between, perhaps giving more responses which combined both passive and aggressive features. Regarding the paranoid group, it was hypothesized that clinically observed "emotional withdrawal" would be manifest by a greater number of neutral responses.

METHOD

Test protocols of all patients admitted to the Dayton State Hospital in 1957 and who were diagnosed either PA-type, D-type, A-type, or Paranoid schizophrenia were withdrawn from patient files. From this group, males, to whom the Rorschach had been administered, were selected. The following criteria had also to be met: (a) under 55 years of age, (b) within the normal range of intelligence, (c) regarding whom both psychologic and psychiatric staffs were in diagnostic agreement, and (d) no questions of cerebral organic factors were raised in reaching the diagnosis.

Under these restrictions only three A-types were found; this group was eliminated from further considerations. Ten D-types, 13 PA-types, and 12 Paranoids were found; the latter two groups being reduced to 10 each for convenience by a random elimination of 3 and 2 Ss, respectively. Age differences between the resulting groups were not significant; mean age being, Paranoid 37.1 years, PA-type 34.9 years, and D-type 37.7 years.

Previous to this selection, Rorschach protocols of patients admitted

¹ This study was undertaken while the senior author was Research Psychologist, Dayton State Hospital, Dayton, Ohio. Miss Shaw is now attending the University of California; Mr. Appleman, Ohio Wesleyan.

Table I—Total, Passive, Aggressive, and Neutral Rorschach Percepts of Dependent, Passive-aggressive, and Paranoid Patients

	D-type	PA-type	Para-noid	D-type
Mean No. Responses.....	16.0	34.9	15.4	16.0
D.....	18.9	19.5	0.6	
t.....	6.3	6.5	0.29	
p.....	.01	.01	----	
% Aggressive R's.....	12.3	20.5	10.0	12.3
D.....	8.2	10.5	2.3	
t.....	2.05	2.60	0.57	
p.....	----	.02	----	
% Passive Responses.....	33.0	20.5	21.9	33.0
D.....	12.5	1.4	11.1	
t.....	2.50	0.28	2.22	
p.....	.02	----	.05	
% Neutral Responses.....	52.5	56.3	62.1	52.5
D.....	3.8	5.8	9.6	
t.....	0.54	0.83	1.37	
p.....	----	----	----	

Note: Following Cronbach (1949), percentage entries in Table I are based on the percentage of the response for each S, thence the mean of separate percentage scores.

during another year were scored by the junior authors to assure a high level of agreement as to scoring categories. Thereafter, each protocol used in the study, with diagnostic label removed, was scored by each judge and differences of opinion were discussed until a mutually satisfactory scoring resulted.

Aggressive responses were defined as any response as given, or on elaboration, which contained words of an aggressive, destructive, explosive nature (e.g., fire, blood, atom bomb). Animals which are associated with power or aggression (e.g., wolves, tigers, leopards, lions) were also scored aggressive.

Passive responses included any response as given, or on elaboration, which contained words of a passive, dependent, oral-incorporative nature (e.g., dolls, ice cream, flowers, all food responses, and otherwise "childish" responses). Some animals (e.g., butterfly) and all "baby animals" were scored passive.

Passive-aggressive responses included any response as given, or on elaboration, which contained both passive and aggressive elements (e.g., "bear cubs fighting," "a soft, furry coat—

all torn and ripped," "a huge explosion with soft, billowy clouds around it").²

Neutral responses were all responses which could not be classified as above.

RESULTS

The data shown in Table I identify the PA-type as being significantly more productive than either of the other two groups, while in terms of productivity, Paranoids and D-types are remarkably similar.

PA-type patients give a significantly greater percentage of aggressive responses than does the Paranoid group and the *t*-value of 2.05 just misses being significant at the .05 level between PA- and D-types. Paranoids and D-types continue to resemble each other in that the percentage of aggressive responses given by both groups is nearly equal.

Passive responses appear highly characteristic of the D-type. In fact, when an "emotionally toned" re-

² This category was scored so infrequently that it was omitted in the final analysis. As a result the percent of passive, aggressive, and neutral responses in Table I will not add up to 100%.

sponse (i.e., a response other than neutral) is given, it is quite likely to be of a passive nature. The D-type, then, gives a significantly greater percentage of passive responses than either of the other two groups. PA-types and Paranoids do not appear to differ on this measure.

While the Paranoid gives a slightly higher percentage of neutral responses than does the D- and PA-type, none of the differences approach significance.

DISCUSSION

Paranoid patients were not only constricted in terms of number of responses but they were lacking in emotional expression. They resemble D-types in respect to meagre productivity, and inability to express aggression, but the D-type is much more prone to express his passivity. It seems reasonable to conjecture that as the D-type continues to approach the world with his extreme passivity, and as he continues to be rebuffed, he eventually withdraws even this contact with reality and relies on his own fantasy ruminations for dependent gratification.

The PA-type is a significantly more active group than either of the two other groups. They are more prone to express aggression than are the D-type or Paranoid groups. What is of extreme interest regarding the PA-type is that the proportion of their passive and aggressive responses is equally divided. The suggestion is that, as is clinically apparent, the PA-type vacillates in his emotional expression between two extremes.

On the basis of this study it would appear as though the PAP classification contains at least two well defined sub-groups, and that these groups can be differentiated with the Rorschach. There are, however, certain shortcomings in the study. Comparative data on a normal control group is obviously needed. More important, clinically meaningful tonal qualities

could not enter into the scoring in the present study, and infrequently do Rorschach examiners indicate such qualitative features associated with a response. Thus, it is quite possible a response, "butterfly" for example, given in a clearly hostile, aggressive tone, was in this study scored passive, when it should have been scored passive-aggressive. In any event, a more sensitive scoring procedure is desirable. It would also be advantageous to "weight" or rank passive and aggressive responses on some continuum of acceptability, or adequacy. It is likely, for example, that Paranoids who did not express aggression to a marked degree, would receive a more "deviant" ranking when aggression was expressed.

SUMMARY

Rorschach protocols of Passive-dependent type and Passive-aggressive type Personalities and Paranoid Schizophrenics were scored in terms of whether individual responses were passive, aggressive, or neutral. A fourth category, passive-aggressive responses, was also employed but was not used in the analysis because of its infrequent occurrence. It was hypothesized that Paranoids would give a greater percentage of neutral responses, that D-types would give a greater percentage of passive responses and the PA-types would combine features of both D- and A-type PAP's. The hypotheses were largely substantiated but the failure of one scoring category to hold up, the absence of A-types, and other procedural shortcomings suggest the results be accepted with reservations.

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Pain Apperception in Chronic Schizophrenics

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PROBLEM

The meaning and importance of pain to the chronic schizophrenic is not clear. Relatively few investigations have been reported and their significance is equivocal. Various physiological measurements have been recorded during painful physical stimulation; and examples of hyper (Cohen & Patterson, 1937), hypo (May, 1948), and normal (Parsons, Gildea, Ronzoni, & Hulbert, 1949) reactions in schizophrenia have been reported and reviewed (Hoskins, 1946; Malmo, Shagass, & Smith, 1951). Some years ago the pervasiveness of schizophrenic "withdrawal" and its possible explanation in terms of lessened physiological reactivity was pointed out (Angyal, Freeman, & Hoskins, 1940). More recently, Malmo et al. (1951) obtained measures of muscle tension, heart rate, blood pressure, and respiration under three stress conditions, including pain-stress with heat apparatus. The experimenters found that the chronic schizophrenics generally had normal or greater than normal physiological functioning, and made the distinction between these background physiological activities and the comparative diminution of "purposive" responses (e.g., pressing a button) made to pain. They concluded that "in schizophrenia those aspects of responsiveness which are associated with emotional arousal may remain intact, while the mechanisms underlying overt, "purposive" acts may be defective or inoperative" (Malmo et al., 1951, p. 372).

The purpose of the present study was to assess pain predispositions or

attitudes of chronic schizophrenics through use of a recently developed method, the Pain Apperception Test (Petrovich, 1957). Previous experimentation with this instrument has indicated its efficacy as a research tool (Petrovich, 1958; Petrovich, 1959), and also provides comparison data obtained from a similar but non-psychiatric population, here utilized as the "normal" control group. In accord with the experimental literature, and with the generally accepted thesis of "withdrawal" in schizophrenia, it was hypothesized that the chronic schizophrenics would apperceive significantly less pain intensity and duration in the first nine stimulus pictures than the control group normals. In addition to this comparison of total felt-sensation scores, and the individual pictures comprising this group, comparative assessment of "anticipation" situations was undertaken to provide more definitive analysis of schizophrenic responses and their relationship to the normal. No specific predictions were made regarding the anticipation situations.

METHOD

The Pain Apperception Test (PAT) consists of 25 pictures of an adult male undergoing pain of various types and degrees: the first nine pictures depict felt-sensation; the next eight compare Anticipation with Felt-Sensation (four counterpart pairs); and the remaining eight (four counterpart pairs) compare Self- with Other-Inflicted pain. Each picture of a counterpart pair is identical except for the variable being investigated. The Self- vs. Other-Inflicted pictures were not used in this study. The following 17 pictures were used: *felt-sensation*: 1, bumped head; 2, cut forearm; 3, hit shin; 4, stomachache;

¹ The writer is indebted to those personnel and patients of Jefferson Barracks VA Hospital whose cooperation contributed to the successful completion of this study.

5, shoulder gunshot; 6, electric shock; 7, headache; 8, stubbed toe; 9, broken leg. *Anticipation vs. Felt-Sensation:* 10-A and 10, fall from ladder; 11-A and 11, ice falling on foot; 12-A and 12, getting deltoid hypodermic; 13-A and 13, getting tooth drilled. To each picture administered him, the subject was required to check his 7-point, multiple-choice response for Intensity and for Duration as follows:

1. *How does the man feel?*

- _____ no pain
- _____ hardly any pain
- _____ some pain
- _____ moderate amount of pain
- _____ much pain
- _____ very much pain
- _____ can't stand the pain

2. *How long will it hurt him?*

- _____ not at all
- _____ seconds
- _____ minutes
- _____ hours
- _____ days
- _____ weeks
- _____ months

For the four Anticipation pictures, the Intensity question was worded, "In view of what will happen, how does the man feel?" The PAT pictures were given in book form and largely self-administered. Additional information regarding rationale, development, and use of the test may be found in previous publications by the writer.

Subjects in the present experiment were 100 diagnosed chronic schizophrenic patients at Jefferson Barracks Veterans Administration Hospital; 35 paranoid type, 12 hebephrenic, 11 catatonic, 3 simple, 5 mixed, and 34 undifferentiated or unclassified. Subjects were alternately assigned to Group A or Group B as follows: *Group A*—Pictures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10-A, 11, 12-A, 13; *Group B*—Pictures 1, 2, 3, 4, 5, 6, 7, 8, 9, 11-A, 10, 13-A, 12. This procedure enabled the comparative analysis of counterpart pictures (Anticipation vs. Felt-Sensation), and permitted direct comparison of the chronic schizophrenic group with a similar but non-psychiatric

group (designated "normal" for comparison purposes) of 100 hospitalized male veterans (St. Louis Veterans Administration Hospital) who were previously given the PAT as part of a more extensive experiment (Petrovich, 1958). The present testing procedure was essentially the same as the initial part of the previous experiment, and comparison of results was therefore not complicated by methodological differences.

RESULTS

Statistical techniques employed in this study (Edwards, 1953; McNemar, 1955) were the same as were used in the prior experiment with normal hospitalized male veterans. As was found with the medical and surgical patients, the distribution of scores ($N=100$ each) of schizophrenics—for each of the first nine or felt-sensation pictures, and for the total scores for this group of pictures—was found to be essentially normal according to the chi-square goodness-of-fit test. Mean age and education of the chronic schizophrenic group were 36.96 years and 10.48 grades, respectively, as compared to the 37.34 years mean age and 9.78 mean grades completed for the previously tested normal veteran group. These differences were not statistically significant. Split-half reliabilities for the schizophrenic and for the non-psychiatric (normal) subjects are shown in Table I.

TABLE I. Split-half Reliability of Pain Apperception Test Scores: Schizophrenic and Normal Subjects*

PAT Scoring Category	Subject Sample	Split-half Reliability	
		Schizophrenic	Normal
Intensity.....	Group A	.71	.79
	Group B	.84	.67
	All Ss	.73	.56
Duration.....	Group A	.83	.85
	Group B	.69	.84
	All Ss	.66	.66

* For Groups A and B, $N = 50$ each for the 13 (schizophrenics) or 17 (normals) pictures administered each group; for All Subjects, $N = 100$ for pictures 1 through 9.

Internal consistency of scores was quantitatively similar for each sample, and acceptably high for the essentially projective PAT.

Felt-sensation

It was hypothesized that schizophrenics would perceive significantly less Intensity and Duration than normals in the first nine pictures, which depict felt-sensation. Table II shows the comparison between the two samples.

As posited, total scores for pain Intensity and for pain Duration were significantly greater (.001 significance) for the normal subjects, and also were significantly greater for Intensity or Duration, or both, on seven of the nine individual pictures comprising the felt-sensation group. There were no significant differences on pictures 2 and 6, indicating quantitatively comparable Intensity and Duration assessments by the two types of sub-

jects. Pictures 1, 3, 4, 5, 7, 8, and 9 depict a bumped head, hit shin, stomachache, gunshot wound, headache, stubbed toe, and broken leg, respectively, and these elicited a lessening or blunting of associated affect; whereas pictures 2 and 6 (cut forearm and electric shock, respectively) elicited a comparatively heightened, quantitatively "normal" response. Suggested clinical explanation for the schizophrenics' heightened reaction to picture 2 involves the castration anxiety symbolized by the cutting or partial severance of a physical projection (forearm) of the body. Picture 6 depicts electric shock to the hand from an electric outlet. Since the majority of the chronic schizophrenics previously have received electro-shock therapy, it seems reasonable to assume that picture 6 re-arouses affect previously associated with the unpleasant EST experience. The seven pictures in which significantly less pain was

TABLE II. Pain Apperception Test Scores for First Nine Pictures: Schizophrenic and Normal Subjects^a

PAT Scoring Category	Picture No.	Schizophrenic		Normal		t- test ^b
		M	S.D.	M	S.D.	
Intensity.....	1	3.81	1.52	4.02	1.14	1.11
Duration.....	1	3.15	1.27	3.59	1.16	2.56**
Intensity.....	2	4.41	1.47	4.49	1.21	.42
Duration.....	2	4.14	1.28	4.25	1.04	.67
Intensity.....	3	3.09	1.29	3.30	1.03	1.27
Duration.....	3	2.65	1.00	2.95	.91	2.22*
Intensity.....	4	4.22	1.75	5.04	1.17	3.90***
Duration.....	4	3.71	1.47	4.39	1.24	3.54***
Intensity.....	5	4.92	1.66	5.22	1.09	1.52
Duration.....	5	4.67	1.51	5.15	1.07	2.59**
Intensity.....	6	3.55	1.84	3.32	1.55	.95
Duration.....	6	2.62	1.32	2.66	1.18	.23
Intensity.....	7	3.60	1.78	4.00	1.35	1.79*
Duration.....	7	3.76	1.62	3.89	1.13	.66
Intensity.....	8	3.91	1.46	4.37	1.21	2.43**
Duration.....	8	3.39	1.24	3.68	1.11	1.74*
Intensity.....	9	4.18	1.91	5.38	1.22	5.38***
Duration.....	9	4.35	1.86	5.32	1.23	4.35***
Total Intensity.....	1-9	35.69	8.12	39.13	4.70	3.67***
Total Duration.....	1-9	32.44	7.17	35.88	5.26	3.87***

^a Pictures 1 through 9 depict felt-sensation. N = 100 each for schizophrenic and for normal subjects.

^b Calculations for one-tailed t-tests.

* Significant at .05 level.

** Significant at .01 level.

*** Significant at .001 level.

TABLE III. Pain Apperception Test Scores for Anticipation and Felt-Sensation Pictures: Schizophrenic vs. Normal Subjects*

PAT Scoring Category	Picture No.	Schizophrenic		Normal		t- test ^b
		M	S.D.	M	S.D.	
Intensity.....	10-A	4.48	2.16	4.92	1.55	1.17
Duration.....	10-A	4.62	2.67	5.36	1.67	1.97
Intensity.....	10	4.18	1.83	4.40	1.92	.59
Duration.....	10	4.62	1.82	4.98	1.50	1.08
Intensity.....	11-A	3.66	1.64	3.80	1.65	.43
Duration.....	11-A	3.56	1.36	3.74	1.61	.60
Intensity.....	11	4.66	1.33	4.96	1.60	1.02
Duration.....	11	4.26	1.32	4.72	1.20	1.83
Intensity.....	12-A	2.54	1.24	2.04	.70	2.49*
Duration.....	12-A	2.46	1.33	2.00	.73	2.15*
Intensity.....	12	2.68	1.09	2.16	.74	2.78**
Duration.....	12	2.38	.86	2.00	.76	2.33*
Intensity.....	13-A	2.94	1.49	2.64	1.12	1.14
Duration.....	13-A	2.58	1.00	2.48	.93	.52
Intensity.....	13	3.50	1.64	2.88	1.39	2.05*
Duration.....	13	3.00	1.29	2.62	.94	1.69

* N = 50 each for schizophrenic and for normal subjects.

^b Calculations for two-tailed t-tests.

* Significant at .05 level.

** Significant at .01 level.

"seen" by the schizophrenics all depict situations which have no apparent special significance or trauma for this syndrome.

Anticipation and Felt-Sensation

Comparison of schizophrenic and normal subjects on each of the PAT pictures comprising the Anticipation pictures and each of the Felt-Sensation counterparts is presented in Table III.

Since no prediction was made, two-tailed t-tests were used for the statistical comparison between subject groups. Results disclose greater mean Intensity and mean Duration scores for normals for pictures 10-A and 10, and 11-A and 11, but no significant differences. For pictures 12-A and 12, and 13-A and 13, the reverse was found with the schizophrenics having greater mean scores for both Intensity and Duration, and these differences were significant for five of the eight score comparisons. Reflection concerning this reversal and the greater scores of schizophrenics must take into account the nature of the stimulus pictures. Those for which normals score higher depict only the person who is

about to be hurt or is being hurt—man falling from ladder (picture 10-A) and landing (picture 10) on his back; dropped cake of ice about to hit (picture 11-A) and hitting (picture 11) man's foot—and both relate to situations which are relatively rare and probably of little concern for the chronically hospitalized schizophrenic. On the other hand, those pictures in which the schizophrenics see greater pain—man about to get (picture 12-A) and getting (picture 12) deltoid hypodermic; man about to have (picture 13-A) and having (picture 13) tooth drilled—depict situations in which another person is inflicting pain which is necessary and intended to benefit the recipient by alleviating present and future suffering. Clinical observation suggests that schizophrenics do not become too concerned about self-inflicted pain, as compared to the normal reaction; and it is possible that normals can more realistically appreciate and tolerate the infliction of beneficial pain than can the schizophrenic who is often ultra-sensitive to the possibility of bodily harm from other people, even where genuine al-

TABLE IV. Pain Apperception Test Scores for Anticipation vs. Felt-Sensation Pictures: Schizophrenic and Normal Subjects^a

PAT Scoring Category	Anticipation			Felt-Sensation			t- test ^b
	Picture No.	M	S.D.	Picture No.	M	S.D.	
Schizophrenic							
Intensity.....	10-A	4.48	2.16	10	4.18	1.83	.75
Duration.....	10-A	4.62	2.07	10	4.62	1.82	....
Intensity.....	11-A	3.66	1.64	11	4.66	1.33	3.34**
Duration.....	11-A	3.56	1.56	11	4.26	1.32	2.61*
Intensity.....	12-A	2.54	1.24	12	2.68	1.09	.60
Duration.....	12-A	2.46	1.33	12	2.38	.86	.36
Intensity.....	13-A	2.94	1.49	13	3.50	1.64	1.79
Duration.....	13-A	2.58	1.00	13	3.00	1.29	1.82
Normal							
Intensity.....	10-A	4.92	1.55	10	4.40	1.92	1.49
Duration.....	10-A	5.36	1.67	10	4.98	1.50	1.19
Intensity.....	11-A	3.80	1.65	11	4.96	1.60	3.57***
Duration.....	11-A	3.74	1.61	11	4.72	1.20	3.45**
Intensity.....	12-A	2.04	.70	12	2.16	.74	.83
Duration.....	12-A	2.00	.73	12	2.00	.76	....
Intensity.....	13-A	2.64	1.12	13	2.88	1.39	.95
Duration.....	13-A	2.48	.93	13	2.62	.94	.74

^a N = 50 each for schizophrenic and for normal subjects.

^b Calculations for two-tailed t-tests.

* Significant at .05 level.

** Significant at .01 level.

*** Significant at .001 level.

truism exists. It is also possible that unconscious homosexual fears of bodily penetration are heightened even by the relatively innocuous hypodermic needle and dental drill.

Anticipation vs. Felt-Sensation

Statistical comparison between scores of each Anticipation picture and its Felt-Sensation counterpart is presented in Table IV for the chronic schizophrenics and for the normal comparison group.

As Table IV indicates, significant differences in counterpart picture scores were found only for pictures 11-A and 11; and for both schizophrenics and normals the Intensity and Duration were significantly greater for the Felt-Sensation (ice landing on man's foot) as compared to the Anticipation (ice falling toward man's foot). Inspection of Table IV in its entirety shows the directional correspondence between scores of schizophrenics and normals on each of the counterpart picture pairs. Thus for

pictures 10-A and 10, both groups tend to evaluate the Anticipation (man in mid-air falling from ladder) as more painful than the resulting Felt-Sensation (man has just landed on his back), whereas the Felt-Sensation was usually evaluated as somewhat more painful than its Anticipation in the case of the other counterpart situations (ice falling, hypodermic, and dental drill).

DISCUSSION

While there are differences between schizophrenics and normals as indicated by comparing their Intensity scores and comparing their Duration scores for each of the eight pictures comprising the Anticipation - Felt-Sensation group (Table III), the comparison of scores for counterpart pictures (Table IV) indicates similarity between the two types of subjects insofar as their reaction to anticipated pain is concerned. In absolute terms, the schizophrenic perceives greater painfulness than the normal,

in both the Anticipation situation and its Felt-Sensation culmination, when another person is involved in administering the pain stimulus. The normal infers or assumes greater painfulness when the pain, whether imminent or inflicted, is self-induced. But from a relative standpoint (Anticipation vs. Felt-Sensation), both schizophrenics and normals seem to "see" or "feel" greater anticipatory threat when the imminent sufferer is comparatively helpless to alter his immediate fate (picture 10-A—man a foot from landing on his back after fall from ladder), as compared to those situations in which he has greater control over what will happen (picture 11-A—man standing upright as ice falls toward his foot) and/or the purpose for the imminent inflicting of pain is beneficial, as in the hypodermic (picture 12-A) and dental drill (picture 13-A) situations.

In his response to the PAT, the chronic schizophrenic is apparently sensitive to the nuances conveyed by particular pain situations. That his responses in terms of pain intensity and duration are not random or haphazard occurrences is indicated—as also was found in the normal comparison group—by the essential normality of response distribution and by the acceptably high reliability of test scores. While the schizophrenic usually "saw" less pain in the pictured situation, it also was found that at times he scored higher, and sometimes significantly so, than the normal in the evaluation of particular pictures; and some logical explanation for these scores was advanced as a function of the personality dynamics often encountered in the schizophrenic syndrome.

Regarding the schizophrenic's pain reaction, Malmo, Shagass, and Smith (1951) distinguished between the background physiological activities associated with emotional arousal and the defective or inoperative "purposive" acts. This would seem to mean that the schizophrenic, in normal fashion,

physiologically perceives the pain or threat of pain but, unlike the normal, is defective in ability to react purposively thereto. While this conclusion has operational specificity, the complicated and unfamiliar experimental situation and apparatus may render rather vague the purposiveness of pressing a button to signal pain. Will it please or anger the experimenter, terminate the pain, harm the subject, indicate the subject's ability to stand pain, or something else? It is also true for people in general that a physical or physiological state conducive to feelings of pain does not necessarily produce its equivalent in mental discomfort. Results of the present experiment, involving psychological evaluation of more realistic and familiar pain situations, permit explanation at a different level and indicate that pain perception of chronic schizophrenics is selective, defensive, and therefore purposive from the standpoint of serving their needs.

SUMMARY

One hundred hospitalized, male, chronic schizophrenics were given the Pain Apperception Test to assess their predispositions or attitudes regarding pain. Intensity and duration responses were obtained from each subject for 17 of the 25 PAT pictures, including the 9 felt-sensation pictures and the 8 counterpart pictures (four pairs) depicting Anticipation vs. Felt-Sensation. Data from a previous experiment provided a comparison group of 100 normal (non-psychiatric) male patients. Results and conclusions were:

1. Split-half reliability of PAT scores of chronic schizophrenics compared favorably with reliability coefficients found for normals, and was sufficiently high (.66 to .84) for this essentially projective test.

2. As compared to normals, chronic schizophrenics are generally predisposed to react emotionally or psychologically to a significantly lesser extent to pain situations wherein the pain is self-inflicted or

sustained (felt-sensation); but their reaction to pain situations of particular experiential or dynamic importance is likely to be comparatively heightened, and quantitatively comparable to the normal reaction.

3. Concerning anticipatory pain situations, in absolute terms the chronic schizophrenic perceives greater than normal painfulness when another person is about to inflict (Anticipation) or is inflicting (Felt-Sensation) the pain; and less than normal painfulness when the pain will be or is unintentionally self-induced; relatively (Anticipation vs. Felt-Sensation), chronic schizophrenics resemble normals in inferring greater anticipatory painfulness or threat when having relatively little control over the imminent noxious stimuli, and in perceiving less anticipatory threat when the purpose for pain infliction is presumably beneficial.

4. It was concluded that the response of chronic schizophrenics to pain was not lacking or defective in purposiveness, but, rather, that their pain perception is selective, defensive, meaningful and purposive from the standpoint of serving their needs.

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Instruction Variation and Rorschach Performance

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An increasing volume of research on projective testing has resulted in a growing emphasis on the situational aspects of such testing. No longer does it appear possible to accept the beliefs of projectivists, as stated by Macfarlane and Tuddenham (1951), that the psychological determinants of every projective response are basic and general or that such tests tap the durable essence of personality equally in different individuals. Variables such as examiner, test instructions, set of patient, and place of testing all interact with motivation or dynamics to produce a given response. Phares and Rotter (1956) have demonstrated that such variables provide cues for expected reinforcements and thus affect obtained responses. An important research task is that of identifying and studying the effects of situational variables, or, on the other hand, ascertaining when these variables appear to have little effect on test results.

The present study attempts to relate Ss' conceptions of the nature of the Rorschach responses to elicited Rorschach responses. Sarason (1954) has specifically suggested that in Rorschach testing a factor to be considered in the evaluation of form-level is how S interprets the instructions. He states:

If a subject interprets the instructions to mean that one is supposed to "let his mind go"—to free-associate—then his "poor" responses do not have the same significance as those of a patient who has concluded that there is a right and wrong answer. We are here trying to indicate that, while reliability of the evaluation of form quality is necessary, it is clearly not a sufficient answer to the problem of understanding the significance of variations in form quality within and between individuals in the clinical interaction (1954, p. 236).

Several studies have been done which specifically bear on the foregoing position. Henry and Rotter (1956) found that Ss who were told the Rorschach is used to discover serious emotional disturbances gave more cautious and conforming responses than did a group which received the standard Klopfer instructions. Carp and Shavzin (1950) demonstrated that Ss asked to make a good impression and then a bad impression showed marked individual changes although there were no consistent group shifts. Forsberg (1938, 1943), giving the Rorschach under four sets of instructions, could not demonstrate significant shifts in Rorschach psychograms. Luchins (1947) found that Ss' fear of being labelled "psycho" influenced Rorschach performance. Hutt, Gibby, Milton, and Pottharst (1950) demonstrated a relationship between Rorschach instruction variation and response variation. Schachtel (1945) also argues that Ss' definitions of the test affect their responses. In another study (Peterson, 1957) one group of Ss was given Klopfer instructions, while another received instructions emphasizing strongly that the test measured imaginative ability. Generally, there was little difference between the groups' responses. Several other studies have shown the effect of various situational variables on Rorschach testing (Coffin, 1941; Eichler, 1951; Gibby, Miller, and Walker, 1953; Kimble, 1945; Klatskin, 1952; and Lord, 1950).

The present study is an attempt to test the hypothesis that Ss' categorizations of the Rorschach as a test in which there are "right and wrong answers" will lead to the following results: (a) higher form-level; (b) more populars; (c) more animal content (Sum of A, (A), Ad, (Ad), AAT);

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(d) more F responses; (e) fewer total responses; (f) fewer movement responses (Sum of M, FM, m, mF, Fm); and (g) fewer color responses (Sum of C, CF, FC, C', C'F, FC', C_n, C_{des}, C_{sym}).

It was felt that Ss who categorized the situation as one wherein there are right and wrong answers would likely perform in a more cautious or safe manner. This would, therefore, lead them to see more populars, show a higher form-level, give fewer C responses, etc. A group perceiving the test as one where "it is all right to let your mind go," should be much less likely to inhibit or censor responses because they seemed wrong or somewhat irrational. This reasoning follows no particular theoretical line but is based on what Henry and Rotter (1956) call a "common-sense" point of view. It certainly appears likely that many Ss ordinarily believe that there are right and wrong or good and bad Rorschach responses despite the usual instructions to the effect that different people see different things. Most people have had enough experience with tests to "know" that an answer is right or wrong so that a conception of an answer that is neither right nor wrong would be rather foreign. Undoubtedly there are additional Rorschach scoring variables which could have been included in this study. However, in the light of previous research these appeared most susceptible to instruction variation.

METHOD

Subjects. Fifty-six female students in introductory psychology courses at Kansas State University were randomly assigned to two groups of 28 each. In none of the psychology courses from which Ss were drawn had projective testing been discussed.

Examiners. Two examiners were used. Both had recently completed a course in projective testing and were at approximately the same level of skill in administering the Rorschach.

One examiner tested 15 control Ss and 15 experimental Ss; the other tested 13 experimental Ss and 13 controls.

Procedure. Upon appearance for testing, Ss were read one of the following sets of instructions:

Experimental group: In this test we want to see how well your perceptions correspond with those of other people your age. In other words, to what extent do you see things like most other people do? The goal here is to do as well as you possibly can. Be sure to give the very best answer you can. Be as correct as possible.

Okay. The test consists of inkblot pictures. People see all sorts of things in these inkblot pictures; now tell me what you see, what it might be for you, what it makes you think of.

Control group: I'm going to show you some inkblot pictures. People see all sorts of things in these inkblot pictures; now tell me what you see, what it might be for you, what it makes you think of.

The Rorschach was then administered to each S in the standard fashion. A free, non-probing inquiry followed at the end of each test. The usual question was, "What was it about the card that reminded you of?" Each S was asked to outline his response on a location sheet. Thus, "Please outline what you saw here so that I can see it just the way you did." It was felt that this procedure would particularly aid the judges in their scoring for form-level.

Scoring. Each protocol was scored blindly according to Klopfer's system (1954) with two exceptions. The populars used were a combination of those of Hertz (1936), Beck (1944), and Klopfer (1954). Also, form-level was judged using Janoff's technique as described by Sarason (1954, pp. 236-241). In this procedure each response is given a basal rating ranging from +2.5 to -3.0. Under some conditions, credits are added to the basal rating. Two raters independently

TABLE I—Means and Sigmas for 28 Experimental and 28 Control Subjects

Variable	Experimental				Control			
	A*	B	A*	B	A	B	A	B
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Responses.....	19.80	3.21	12.62	4.14	23.80	4.62	15.23	5.23
Form-level.....	1.04	.38	1.14	.52	1.00	.41	1.12	.30
Proportions								
Form.....	.41	.16	.46	.20	.46	.16	.41	.17
Popular.....	.30	.13	.31	.12	.27	.12	.30	.10
Movement.....	.31	.13	.35	.20	.26	.17	.38	.14
Color.....	.31	.16	.25	.13	.34	.14	.27	.15
Animal content.....	.52	.13	.45	.11	.50	.13	.55	.14

* A and B refer to examiners.

scored twelve randomly selected records in order to ensure reliability of scoring. Percentages of agreement were calculated between the two raters. The average percentage of agreement was .90 (the range being from .78 for form-level to .98 for total number of responses). *E*'s scoring alone was used in testing the hypotheses. With the exception of total responses and form-level, *Ss*' scores were converted into proportions (number of given responses divided by total number of responses). Form-level refers to a ratio of the algebraic sum of all form-level ratings to total number of responses.

RESULTS AND DISCUSSION

Group means are shown in Table I. In order to test the hypotheses, analyses of variance were conducted. In the case of total responses, the data were transformed to a logarithmic scale, while an angular transformation was applied to data expressed in proportions.

Examination of Table I reveals that several of the results are in the predicted direction. The exceptions are form, movement, and animal content. In some instances, Examiner A reverses Examiner B in direction of results. However, none of the analyses of variance yielded *F* values significant at the .05 level. Thus, within the limits of this study, instruction variation had no effect on the variables under study. The only significant portion of the data was a difference between examiners in total number of

TABLE II—Analysis of Variance of Total Responses Data

Source of Variation	df	Mean Square	F
Betw Examiners.....	1	.3285	9.41*
Betw Instructions.....	1	.0494	1.42
Interaction.....	1	.0032	.09
Within Groups.....	52	.0349	

* An *F* of 7.17 is significant at .01 level.

elicited responses. This analysis of variance is shown in Table II.

Although the instructions produced no significant differences between means, the examiner results are similar to the results of Lord (1950). She reports examiner differences in total responses, *C*'%, *M*'%, and *C*'% among others. As in this study, however, there were no differences in *A*'%, *P*'%, and *F*'%. Direct comparison is difficult since her examiners were different from the present ones, and further, some of the data in the current study were combined; for example, *M* and *FM*, *C*' and *C*, etc. One of the examiners indicated at the conclusion of this study that more experimental *Ss* than control *Ss* seemed to make comments during testing of an impotent nature or comments indicating lack of confidence in the "goodness" of their responses. These impressions are highly subjective, of course, but might prove interesting hypotheses for future research.

One factor to be considered in relation to lack of differences between instructions would be the relative homogeneity of *Ss*. Since they were all college students there may have been

an initial tendency for them to perceive the test in a "right or wrong" light. This tendency could have operated to obscure the differential effect of the instructions.

Perhaps a significant aspect of this study is its demonstration that the Rorschach is not completely at the mercy of situational factors. Thus, the growing literature emphasizing situational aspects of Rorschach testing has implied high variability in Ss responses. Granted that variation as a function of the situation exists, so too does stability.

SUMMARY

In this study it was predicted that when Ss categorize the Rorschach testing situation as one in which their responses are either right or wrong the result would be fewer total, movement, and color responses; more popular, animal, and pure form responses; and a higher form-level. Ss were 56 female students in introductory psychology. Thirty Ss were tested by one examiner and 26 by another. Experimental Ss were given instructions emphasizing the right-wrong nature of Rorschach responses and encouraged to do the best they could; control Ss received only the standard Klopfer instructions. Raw scores on all variables except total responses were converted to proportions or ratios. An angular transformation was performed on all proportion data and a logarithmic transformation on total response data. Analyses of variance were conducted for each variable. Results showed that none of the hypotheses was confirmed at a statistically significant level, although several variables showed differences in the predicted direction. The only significant result (non-predicted) was a difference between examiners in total number of responses elicited.

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A Manual for Rating Drive Content in the Thematic Apperception Test¹

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Since the Thematic Apperception Test (TAT) was first introduced (Morgan and Murray, 1935) its clinical and its research applications have developed unevenly. While practicing clinicians draw heavily upon TAT material in psychodiagnosis, many researchers shy away from the use of such a bulky instrument even in dynamically oriented research—and this in spite of its demonstrated research utility (cf., Holt, 1950). The numerous methods which have been developed for semi-objective analysis of the raw TAT protocol (cf., Shneidman, 1951) seem designed primarily to facilitate intra-individual analysis. The task of an adequate scoring manual for research purposes is to describe theoretically significant variables which have broad enough relevance to permit meaningful comparisons among individuals. One such set of variables, suggested by psychoanalytic theory, are those associated with processes of impulse expression, with ego control operations, and with the coordination between these two.

Consideration of recent developments in psychoanalytic ego psychology (cf., A. Freud, 1937; Hartmann, 1958; Kris, 1952) suggested a dual significance in the use of drive content in TAT stories. At the one extreme, the absence of such content suggests the workings of a pervasive, generally rigid, and often fragile system of ego defenses. At the other extreme, there are at least two implications depending upon how drive content is expressed: (1) that there is a weakening of ego control over impulses such that these impulses break through in ego alien and/or maladaptive ways, or

(2) that drive energies have been sufficiently "neutralized" (Hartmann, 1955) to be used in productive ideational activity rather than solely in the direct pursuit of libidinal and aggressive aims. The present manual outlines a procedure for rating libidinal and aggressive drive material in the manifest content of TAT stories.

The degree and kind of ego control over expressed drive content alters the interpretation to be placed on the dynamic significance of such drive expression. In contrast to the dream where the relatively more universal workings of the "primary process" (Freud, 1900) are in evidence, the TAT evokes the relatively more individualized workings of the "secondary process" (Freud, 1900) as indicated by the planned and internally consistent character of these stories in general; there is, at least in normal persons, a fair degree of active ego control over the drive content which is expressed in the TAT. The present manual describes a procedure for rating the degree to which drive content is integrated into the theme of the TAT story, the effectiveness of such integration being considered an index of ego control. Drive content which is expressed as an integral part of the story theme meets the requirements of the TAT task, and as such is a fully adaptive response. In sharp contrast is the disruptive and inappropriate appearance of drive content which reflects a weakening of ego control. Between these extremes, various incidental uses of drive content are possible — for example, when S barely manages to relate such content to the main story or when it is deliberately used incidentally in such a way as to lend dramatic or stylistic enrichment to the theme. The manual provides for ratings of thematic, in-

¹ The manual was developed as part of a research project supported by a grant from the Ford Foundation.

cidental, and inappropriate uses of drive content.

Ego control may also be reflected in the level of drive expression, i.e., in the moderation of drive intensity and the socialization of its aims. The manual describes ratings for three such levels: (1) direct-unsocialized drive expression, (2) direct-socialized drive expression, and (3) disguised, indirect, or weak drive expression. Although a heavy preponderance of direct-socialized drive expression may have no pathognomic implications, a preponderance of direct-unsocialized and/or of indirect and disguised drive content suggests an imbalance between ego control and impulse expression. The relationships among the three levels have implications regarding the nature of control operations.

In addition to its links to psychoanalytic theory, the present manual has at least one other characteristic to recommend it for research purposes: it was developed in a research context as an attempt to systematize available material on a group of subjects then being studied (Pine, 1959). It provides over-all summary scores to facilitate inter-individual comparisons, as well as providing the raw material necessary to derive additional summary scores tailored to other research requirements.

THE SCORING MANUAL

Presence of drive content

Throughout the manual, the term "drive" is used in the psychoanalytic sense to refer to instinctual drives and their derivatives. This includes aggressive and libidinal drives and partial drives (oral, anal, phallic, genital, exhibitionistic, voyeuristic, sadistic, masochistic, homosexual, narcissistic) (cf., Freud, 1905). The term "drive content" refers to observable ideational derivatives of the inferred aggressive and libidinal drives. These derivatives appears in the TAT story content.

Drive content is rated only if it is

stated explicitly in the story; thus, for example, implied motives and symbolic expressions of drives are not rated. The decision to rate only the manifest story content was made for two reasons: first, in the belief that individual differences would be erased somewhat in speculations about more universally present drives which are latent (in the story) and unconscious (in the person); second, in an attempt to relate the ratings closely to the psychology of ego functioning. The manual is not intended to be an all-purpose one; both its usefulness and its limitations are tied to its commitments to psychoanalytic theory (reflected here in the selection of aggressive and libidinal drives for rating) and its more specific commitment to psychoanalytic ego psychology (reflected here in the emphasis on control operations with regard to expressed drive content).

Drive content is rated if it appears at any point in S's response to a TAT card except in response to a direct inquiry question. Thus, "how did he feel?"—"angry" would not be rated although responses to inquiries such as "tell me more" or "how did it all turn out" are rated. Drive content is rated without regard to its extent; passing mention or full thematic development of, say, an aggressive incident would each be rated. On the other hand, drive content which is too far removed from aggressive or libidinal connections is not rated (for example, friendship, achievement motives, gazing at scenery); it was found necessary to establish some such cutting point, albeit an arbitrary one, in order to avoid a tendency to rate almost everything S says. The ratings of drive level, described below, represent an attempt to cope with this entire issue. Finally, affective experiences which are directly linked to particular drives (anger, love) are rated, although affective states in general are not (shame, guilt, sadness, elation, etc.). These and all other

ratings are illustrated below.

Integration of drive content

S's task on the TAT is to tell a story about a picture. To the degree that drive content is given in accord with this task requirement, some ego control is indicated. The degree to which drive content is integrated into S's response to a card (the response ordinarily being a story, but on occasion an essay-like production or an elaborated description) was taken to be an index of appropriateness of drive expression and adequacy of ego control.

Of the appropriately used drive content, two types were distinguished. Drive content which is part of the central theme or character portrayal of the story is rated *thematic*, in contrast to drive content which is *incidental* to the main theme (but still part of the story). Drive content can be rated thematic even if it is given only briefly; its links to the main story rather than its extent is at issue here. Even if the rater feels a story could get along without an item of drive content, if S gave it as part of the central story theme it is rated thematic. Incidental drive content, while integrated into the story, is generally expendable even in S's presentation of the material. For example, drive content is generally incidental when it is given in analogy which is intended tangentially to enrich the story.

In contrast to both thematic and incidental ratings, a rating of *non-appropriate* is given to those expressions of drive which are not in accord with the TAT task (telling a story about a picture) or which were not intended by S. These include: 1. Exclamations and side comments before, during, or after the story (for example, "Wow, this is a sexy one" or "That murder last week gives me an idea for this story"). 2. Drive content given in card descriptions when it does not then get included in the story (for example, mention of the gun on card 3BM followed by a story about fatigue rather than, say, sui-

cide). 3. Misperceptions or doubts about the identity of persons or objects when drive content is involved (for example, calling the violin on card 1 a machine gun or misperceiving the sex of a character; the figure on 3BM and the lower figure on 18GF were unrated whether seen as male or female). 4. Verbal slips where drive content is evident in the slip itself (including the sexual ambiguity suggested by use of wrong-sex pronouns—"he" instead of "she" for example). Slips that are made in a broader drive content context are rated separately while the story context gets its own rating.

Directness of expression of drive content

TAT stories vary in the degree to which their expressed drive content is primitive, value-violating, and direct on the one hand, or socialized, value-syntonic, and/or disguised on the other. The present manual distinguishes three levels of expression of drive content, the levels partially modelled after Holt and Havel's (1959) distinction between two levels of drive content in Rorschach responses.

Level I (direct-unsocialized) includes those expressions of drive content where libidinal or aggressive impulses are directly expressed in a way contrary to conventional social values. Murder, robbery, rape, prostitution, homosexuality, alcoholism, and extra-marital sexual relationships, for example, are all rated here. In addition to the criterion "violation of conventional values," a second criterion is applied for aggression derivatives, i.e., physical expression. Anger is rated level I only when it involves physical violence. In all cases, it is only the unsocialized and direct drive expression in the *manifest* story content which gets rated.

Level II (direct-socialized) includes those expressions of drive content where libidinal or aggressive impulses are expressed directly but in socialized ways. Anger expressed without phys-

ical violence, arguments among family members, sexual rivalries and jealousies, kissing, eating, social drinking, intercourse between marriage partners, and childbirth are all rated here.

Level III (indirect-disguised; weak) actually includes two kinds of drive content.² The first, indirect and disguised drive expression, includes those instances that are associated with (often relatively strong) drives, but where the underlying impulse is neither explicitly thought nor acted upon in the story. Mention of police, soldiers, rulers, restaurants, saloons, illness, accidents, natural or accidental deaths are all included here. All of these permit the inference that a particular drive is an issue for the person but, although some reflection of the drive appears in the manifest story, the drive itself is not expressed. If the context alters this, e.g., "he ate in a restaurant" or "the soldier fought," level II or I would be rated. The second type of content rated level III includes drive expressions which are weak and highly derived. For example, social expressions of aggression derivatives such as strikes and militant unions are rated here as are highly formalized drive expressions such as familial affection. An arbitrary cut-off point must be established here so that material which is too weak does not get rated. Reference to surgeons, microscopes, struggles to get ahead in life are not rated although inferences can readily be made to impulses from which they derive.

Three additional points on drive level ratings: (1) Negation of drive expression is rated identically with positive expression. "He wanted to kiss her but he didn't" is rated level II. (Such negated expressions are often given in such a manner as to make them "incidental"; for example, "let's see . . . it's not that he wanted to kiss her, I'd say he just liked her.")

(2) Thoughts and wishes are rated equally with actions in most cases. "He wanted to kill him" is rated level I whether or not the act is carried out. On occasion, such content is given as a way of communicating intensity rather than true intent; in those instances a more controlled level may be rated. (3) Context is always considered in rating drive level. For example, kissing as part of an attempted seduction of a married person is level I rather than II. Similarly, criminal execution and war are the two major examples of killing that may be rated level II rather than level I; for war stories, the level II rating is given when the emphasis is on patriotism, duty, and the normal course of events in war rather than on aggressive acts and violations of rules of warfare.

Units of analysis

Drive material may be rated many times in any one story, and considerations of the extent of the expressed content were independent of the rating unit. Several rules were established to guide raters in selecting the unit to be rated in each instance: (1) Expressions of derivatives of different drives are rated as separate instances of drive expression. For example, "he was angry but a couple of drinks helped him to settle down" would be rated once for the aggressive content and once for the oral content. (2) Expressions of drive with differing degrees of integration into the story (thematic, incidental, or nonappropriate) are always rated separately, even if the drive expressed is identical. Thus, an incidental and a thematic aggressive phrase would receive two ratings. (3) In contrast, a new level of an already expressed drive would not get a separate rating. "He went into a bar (level III) and got dead drunk" (level I) would be rated only once, the rating of the more extreme content. This stepwise expression of drive material appears so often and generally with such an inevitability in the sequence that to rate them inde-

² Mrs. Shirley Winston at New York University is currently experimenting with a division of these two types into separate rating categories.

pendently would artificially raise the total number of ratings given. (4) Within the same general type of drive content and the same degree of integration separate ratings are given if new behavior sequences are described or if the expressed impulse has a new aim.

Summary scores

In the initial research for which the manual was developed, seven summary scores were derived for each S: a score representing the total number of drive content ratings; one score each for the number of thematic, incidental, and non-appropriate ratings; and one score each for the number of level I, level II, and level III ratings. The total of the three levels scores is equal to the total drive presence score, as is the total of the three integration scores. Since the six sub-scores are therefore not independent of the total number of drive content ratings, total drive content must be held constant in statistical work with the sub-scores.³

There are various other possibilities for summarizing the discrete ratings. Scores for amount, integration, and level can be derived for specific drives — separating aggressive or particular libidinal impulses.⁴ Further, more inclusive scores which combine the various degrees of integration or levels of drive expression can be derived. Weighting the instances of drive integration (three times the number of thematic ratings plus two times the number of incidental ratings plus the number of nonappropriate ratings) and dividing by the total number of

ratings gives a score which represents a trend towards well-integrated drive content at the one extreme and poorly integrated drive content at the other. Ranking the percent of level I ratings from most to least and the percent of level III ratings from least to most, adding the two sets of ranks, and re-ranking the totals gives a ranking ranging from highly modulated drive content at the one extreme (low level I and high level III) to relatively unmodulated drive content at the other extreme (high level I and low level III). These global scores, plus a score for total drive presence, were used in gauging the validity of the manual; and results with these scores are described below.

Some illustrative stories and ratings

Four illustrative TAT stories are given below. Stories particularly rich in rating issues were selected. In each, certain material is lettered and italicized; comments on the lettered material are given immediately following each story, using the letters for cross reference. Ratings are given in parentheses. The first symbol indicates the drive level (I, II, or III); the second symbol indicates the degree of integration ("T" for thematic, "In" for incidental, and "N" for nonappropriate).

1. (Card 3BM) (a) *Well, I take it that is a pistol on the floor.* This young man is in a Balkan country. He was young and (b) *inclined to melancholy.* (c) *The Germans had overrun the country. His father had been captured and killed by the Germans.* His fortune was lost and *all his friends died.* Oh, I forgot to say he was Jewish. He's been making feverish attempts (d) *to release his father,* but without success. Now he has returned from an exploit where he went to German headquarters, (e) *shot the man who was there,* and ran through the streets to his home. He knows what will happen when he's caught, so he (f) *puts a bullet through his own head.* (g) *I guess that's a pistol. It*

³ In the initial study (Pine, 1959), these scores were correlated (τ) with literary quality in the TAT; literary quality varied positively with total drive content; with thematic use of drive, and with level III drive expression, and negatively with nonappropriate use of drive.

⁴ F. Goldberg at New York University has found some preliminary but suggestive evidence of an inverse relationship between aggression ratings on the TAT and responsiveness to subliminal stimuli involving aggressive themes.

certainly isn't a very realistic representation of one though.

a. (Not rated) Although this is card description, it is later used in the story. Had the gun been mentioned and then omitted from the story it would have been rated III-N (level III because it is associated with an aggressive impulse which, however, would not have been expressed in the story). As is, the rating is included with (f), below.

b. (Not rated) Affects are rated only if drive content is specifically stated.

c. (I-T) All of this is rated as one unit. The emphasis on the atrocities of war requires the level I rating. It is all central to the story theme.

d. (I-N) The phrase "release his father" contradicts the earlier "his father had been captured and killed." There is a slip here somewhere, and since it involves the killing of the father, it is rated level I, nonappropriate.

e. (I-T) Though still aggression, this is a new behavior sequence (in relation to the actions of the German invaders) and is rated separately. Although one may sympathize with the actions of the hero, the murder in a revenge context is best rated as level I.

f. (I-T) This aggression too is sufficiently different from the former instances to be rated separately. Suicide is level I. Although the suicide is only briefly mentioned, it is still part of the central theme of the story and is rated thematic.

g. (I-N) This is a nonappropriate extraneous comment; it has nothing to do with the story. Since context is considered in rating drive level, and since the gun has already been established in the story as a murder and suicide weapon, the reference to the gun here is level I rather than level III.

2. (Card 10) (a) *A soldier going off to fight in the war*, and the woman with whom he is supposedly (b) *in love* is crying and kisses him goodbye. Much later, he returns to France and

finds that his young lady has (c) *married someone else* in order to keep herself in (d) *food* and clothing. And he does nothing probably. Looks for (e) *food* and clothing for himself. No action. Well, of course the marriage—I could clear that. He could find her, and she, not having married for love, (f) *could give herself to him as well as to the person she married*.

a. (II-T) In the context of duty, war is rated level II.

b. (II-T) This is a direct expression of a libidinal impulse in a socialized way and in line with the main story theme.

c. (III-T) The later references to marriage in the story add nothing new to this first reference and are included in this rating. Marriage, when given in such a stylized way, is rated level III since only a very watered down expression of drive comes through into the story.

d. (II-T) Oral (food) content is different from the earlier rated libidinal content (kissing and marriage) and is rated as a separate unit. The reference to food provides motivation for the marriage under wartime conditions and, as such, is essential to the main theme of the given story. It is a direct expression of an oral need.

e. (II-In) Once again the reference to food is a direct oral expression in a socialized way. Here, however, it seems to be presented by S as a momentary pause in the story, before S gets on with the main theme; as such it is rated incidental. Incidental presentation by S in the story, rather than the rater's decision that a story could do without an item of drive content, is what requires an item of drive content to be rated incidental. Although the "food" content here is identical with the previously rated item, it is rated as a separate unit because it is a different degree of integration (incidental rather than thematic) and because it is a new behavior sequence carried out by another person; either of these reasons alone would be suf-

ficient to require a separate rating for this unit.

f. (I-T) Using the conventional values of society as the yardstick for deciding between level I and level II ratings, this is unsocialized drive expression and is rated level I.

3. (Card 13MF) This boy had (a) *time to kill* and stopped in a (b) *bar for a few drinks*. He kept (c) *noticing a girl who was not pretty but whose dress showed off her body well*. She came up to him after a while and suggested they go to her apartment. She was (d) *not what might be considered an actual prostitute* but she was lonely and wanted to do something to change her mood. After they had (e) *three or four drinks* at her place, she suddenly suggested (f) *they go to bed together*. The boy was naive and was taken aback, but felt his (g) *manly pride* required him to do so—so he did. As he's leaving the room now, he feels that sexual relations are not all that they are made out to be and that he can take it or leave it. But what he doesn't realize is that (h) *sex should never be an end in itself but only a means to an end with someone you love*.

a. (Not rated) Figurative expressions like this one are not rated.

b. (II-T) This is an instance where two similar instances of drive content are rated as one unit even though they would individually be rated at different levels (bar as level III and drinks as level II). The two form a consistent unit and are rated at the level of the strongest expression.

c. (II-T) Although "noticing" alone would be considered too distant from voyeuristic impulses to be rated, the total context provides a ratable voyeuristic-exhibitionistic theme. The expression is direct, socialized, and thematic.

d. (I-In) The denial here makes this incidental to the main theme. Although prostitution is negated, it is still level I.

e. (II-T) This is a new behavior sequence and is rated separately from

the earlier oral content. The drinking here is still sufficiently socialized to get a level II rating.

f. (I-T) This rating includes the various references to intercourse in the story. Premarital intercourse, certainly in this non-love context, is rated level I.

g. (III-T) This is a thematic and highly derived expression of narcissistic libido.

h. (II-In) This is extraneous comment, but it manages to retain enough of a link to the story (as a "moral" of sorts) so that it cannot be rated nonappropriate. Hence, the incidental rating.

4. (Card 4) (a) *These people resemble Clark Gable and Gene Tierney*. The curtains give the impression this takes place in a house, but (b) *the pin-up picture in the back* seems to negate this. So I conclude that it's (c) *in a bar or a roadside stand or someplace like that*, and (d) *this waitress is trying to prevent this truck driver from leaving*. He's (e) *not too well liked* by the other drivers on the route, so one of them started a rumor that his (f) *girlfriend here was cheating on him*. The eyes of the girl make it clear that she'll convince him of the falseness of the rumors. (How does he feel?) He has a tinge of doubt, but he believes (g) *him...her...* basically, but he has doubt. The doubt makes him have a not very convincing (h) *fit of anger* but then they forget it.

a. (Not rated) Although this is irrelevant commentary, it has no drive content and is not rated.

b. (II-In) This is card description which gets into the story only peripherally, through providing a kind of atmosphere and backdrop; as such it is incidental. The voyeuristic implications of the pin-up picture seem direct enough to require a level II rating.

c. (III-In) All of this oral content is level III; no one is actually eating. Although this is part of the story, the way in which S presents it ("it could

be X or Y or Z") indicates that it is incidental even to S himself.

d. (III-T) "Waitress" is rated separately from "bar or restaurant" since it is given as part of the main story theme and is thus a new level of integration.

e. (II-T) The rating is level II. In spite of the euphemistic and negative mode of expression, this is still a direct expression of hostility.

f. (II-T) Applying conventional standards of morality: since the first man and the woman are unmarried, and since intercourse is not explicit here, the reference to "cheating" seems better described as level II than level I.

g. (III-N) This slip, involving a sexual confusion, gets rated although a slip in which the drive content is not evident in the slip itself would not be rated. The him-her ambiguity does not involve any direct drive expression and is rated level III.

h. (II-T) Although this is part of the inquiry, it is rated because it was not evoked directly by an inquiry question. (If the sequence had been, "how does he feel?" "angry," there would be no rating.) No physical violence is made explicit in the story, so the "fit of anger" remains level II.

RELIABILITY AND VALIDITY

Reliability

Eight TAT stories for each of 28 Ss (14 male and 14 female undergraduates) were rated independently by two raters.⁵ Ratings were carried out after an extensive period of rating practice by the two raters working together. However, once begun, the ratings were carried out without further checking or discussion. Final ratings were achieved by discussion of discrepancies between raters.

Of the 224 stories rated, there were 637 rated units of drive content. An agreement was counted when both raters rated the same unit of content

or when both raters agreed that an entire story should get no ratings (the latter occurring in only 27 of the 224 stories). The raters agreed in 441 instances (69 percent of the time). Obviously this is far from perfect, but considering the material being rated (and remembering that agreement by chance alone, if such could be computed, would be near 0 percent), it seems at least adequate.

Inter-rater agreement for drive level and integration ratings was computed for only those instances where there was agreement on drive presence in the first place. There were 414 such agreements (441 less the 27 unrated stories). A summary of the agreements is given in the first three columns of Table I.

The number of units actually rated for the various levels of expression and degrees of integration varies widely. However, the percent of agreement is generally good. Agreement by chance alone would be 33 percent in each category. Only the percent of agreement for ratings of incidental use of drive (65 percent) falls below the 80 percent mark.

The last two columns of Table I give the number and percent of each type of rating finally assigned after discussion of discrepancies between raters. It can be seen that level II expression and thematic integration are by far the most commonly rated. It is likely that the proportion of incidental, nonappropriate, and level I ratings would increase in a psychotic population; the level II-thematic quality of the ratings here reflects the essential normalcy of the subject population. Another reason for the low total of incidental, nonappropriate, and level I ratings is the fact that half of the TAT stories used here had been written out by Ss rather than given orally. It was found that the more extreme drive levels and more poorly integrated drive content came most frequently in the orally given stories. Writing allows for more control operations; thus whether to use written

⁵ I would like to thank Paul Lippmann for his assistance in carrying out these ratings.

TABLE I. Inter-rater Agreement and Final Ratings for Drive Level and Drive Integration Ratings

	Number Units*	Number Agreed**	Percent Agreed**	Final Number Rated	Final Percent Rated
Level I expression.....	76	62	82	79	15
Level II expression.....	208	167	80	283	52
Level III expression.....	130	111	85	180	33
Total for levels.....	414	340	82	542	100
Thematic use of drive.....	376	358	95	474	88
Incidental use of drive.....	20	13	65	34	6
Nonappropriate use of drive	18	16	89	34	6
Total for integration.....	414	387	93	542	100

* Number of units where there was agreement on drive presence initially.

** Based on the degree to which rater II (PL) agreed with rater I (FP).

or oral stories is a methodological question to be considered when the manual is applied to other studies.

Validity

Q-sort ratings were available on the 14 males (one of whom was omitted from this analysis because additional data for a related study were not available from him). Correlations between the TAT manual scores and rankings derived from the Q-sorts were carried out to determine at least tentatively some measure of the validity of the TAT scores.

Q-sort ratings were obtained as follows. Each S had been given, in addition to the TAT, a Rorschach test and a Wechsler-Bellevue; each had written an autobiographical statement and each had been extensively interviewed by a trained clinical psychologist. Two raters, first independently and then by consensus, used all of these materials to evaluate and then rate S on six Q-sorts (Affects and Inner States, Thought Processes, Motives, Defenses, Interpersonal Behavior, and Identity and Self-Attitudes), each containing 30 items to be rated on a 6-point scale and forced into a normal distribution. A syndrome analysis, following Horn's (1944) technique was carried out on the 180 variables and produced 50 item-clusters and 51 residual single items. Final cross-subject rankings (derived from the Q-sorts) of the 101 variables were compared by rank correlations to the TAT manual scores.

The feasibility of using ipsatively derived Q-sorts to form a normative ranking of Ss is suggested by Block's (1957) work with such material.

Two main factors contribute to the tentative and exploratory nature of the validation correlations. First, of the large number of correlations carried out (101 for each TAT score) only a small number were statistically significant; chance may thus be an important factor here. The fact that the items which do correlate by and large make good theoretical sense and form internally consistent clusters mitigates this problem somewhat. The second point to be borne in mind is that the TAT was used by the raters along with the four other available protocols in making the Q-sort ratings; thus there is some contamination with the TAT manual scores. However, for many of the variables which correlate significantly the material for making the rating would seem to come from the Rorschach, the interview, or some other protocol rather than from the TAT, and in at least one case (Table IV, No. 8) the correlation is opposite to what one might expect had the judgments been made naively from the TAT alone. Be this as it may, it seems most conservative to interpret the correlations as indications at least that the Rorschach, the Wechsler-Bellevue, the interview material, and the autobiography supported and did not contradict any cues which came from the TAT. At the time the

raters made the Q-sorts they were unaware that they were eventually to be correlated with the TAT manual.

Results are presented in three tables. For this exploratory analysis, all correlations at the 10% level or better ($\rho = .48$, two-tailed; $N = 13$) are reported. The tables are set up to indicate both extremes of the Q-sort ranking in relation to the extreme on the relevant TAT manual score. Correlations are therefore given without signs. In some cases the two extremes of a Q-sort were differentially defined but in other cases one extreme is simply the absence of the other (i.e., X and not-X). There is some near-duplication of items within tables; this derives from the initial breakdown of the Q-sorts into six partially overlapping categories.

Table II presents the correlations between the drive presence ranking on

the TAT manual and the rankings derived from the Q-sorts. The drive presence ranking is based upon the total number of units rated for each S in the final consensus rating.

Ss with high drive presence tend towards emotionality, expressiveness, and flux. An expressive quality characterizes thinking, communication, and relationships (Nos. 1 to 5). At times, the expressiveness has a distinctly positive and adaptive character including spontaneous affect, insightfulness, and meaningful relationships (Nos. 6 to 8). At times this tends towards an excessive fluidity both in emotional control (Nos. 9 and 10) and in identity (Nos. 11 and 12). Thus, high drive presence in the TAT, *apart from* considerations of the *control* over drive expression, reflects an expressive quality, a personality in flux, which may have either positive

TABLE II. Rank Correlations between TAT Drive Presence Ratings and Personality Variables

	Rho	Characteristics of Ss with High Drive Presence	Characteristics of Ss with Low Drive Presence
1.	.62**	Communicates ideas clearly and effectively in colorful yet appropriate language.	Thinking is blocked and inhibited.
2.	.87***	Not quiet and not uncommunicative.	Quiet and uncommunicative.
3.	.64**	Vivid imagery.	Minimal and stereotyped fantasy; clings to reality.
4.	.75***	Does not use inhibition as a main defense.	Uses inhibition as a main defense.
5.	.84***	Is not inhibited or uncommunicative; does not have a rigid self-concept.	Is inhibited, uncommunicative, and has a rigid self-concept.
6.	.78***	Balanced, flexible, and spontaneous affect.	Little anxiety tolerance.
7.	.52*	Has insight into self.	Lacks insight into self.
8.	.52*	Relationships with people neither tenuous nor marginal.	Relationships with people tenuous and marginal.
9.	.77***	Emotionally labile (but not necessarily insincere).	Emotionally flat.
10.	.75***	Depression: depressed, ashamed, self-abasing and self-blaming.	Not depressed.
11.	.58**	Role plays, tries to reassure self of acceptability and competence (unstable identity).	Identifies self with values of a professional or occupational group in an appropriate manner.
12.	.50*	Identifies with the underdog.	Does not identify with the underdog.

* Significant at 10% level; two-tailed test.

** Significant at 5% level.

*** Significant at 1% level.

or negative implications for personal functioning. It should be noted that these results are for an essentially normal group of Ss; in a psychotic population, high drive presence apart from considerations of control is likely to be much more directly associated with pathology.

In marked contrast, low drive presence, even apart from the question of control over that which is expressed, appears to reflect a pattern of inhibition, overcontrol, and rigidity. These individuals seem to be out of touch with the inner resources of personality: thinking is blocked (Nos. 1, 3, and 7), and control operations seem both excessive and shaky (Nos. 4 and 6). There is also a blocking of the resources for expressive contact with the world outside: both emotionality (Nos. 9 and 10) and relationships (Nos. 2, 5, and 8) are minimal. In

this over-all context, and especially in the light of the strong correlation with rigid self-concept (No. 5), it seems most reasonable to interpret the suggestions of a "professional" identity (Nos. 11 and 12) as reflections of a prematurely rigid identity formation in these Ss who are, after all, only adolescents in the first year of college.

Table III presents correlations between the drive integration ranking and the rankings derived from the Q-sorts. The over-all summary score for drive integration (described above in the section on summary scores) reflects a tendency towards thematic use of drive material at the one extreme and towards nonappropriate use of drive material at the other.

Ss with well-integrated use of drive content (*amount* of drive content held constant) present a general picture of smooth functioning, perhaps at the

TABLE III. Rank Correlations between Summary Scores for Drive Integration and Personality Variables

	Rho	Characteristics of Ss with Well-Integrated Use of Drive	Characteristics of Ss with Poorly-Integrated Use of Drive
1.	.56**	Skillful and orderly reasoning.	Thinking is vague and fuzzy, with neologisms and distortions.
2.	.57**	Efficiently ordered thinking and dependable judgment.	Thinking not efficiently ordered; undependable judgment.
3.	.84***	Concentrates easily.	Does not concentrate easily.
4.	.54*	Concepts are neither loose nor autistic.	Concepts loose or autistic.
5.	.49*	High need play-mirth.	Low need play-mirth.
6.	.63**	Not oversensitive to challenge and threat.	Oversensitive to challenge and threat.
7.	.68***	Does not fear privation; low need harm-avoidance.	Fears privation; high need harm-avoidance.
8.	.50*	Not characterized by failure of defense.	Under stress becomes unadaptive and retreats to earlier modes of functioning; regression and failure of defense.
9.	.72***	Does not easily experience anxiety; characteristically bland or serene.	Anxiety is stormy and diffuse.
10.	.52*	Suffers guilt over hostility and over heterosexual impulses.	Does not suffer guilt over hostility and heterosexual impulses.
11.	.69***	Does not use somatization as a main defense.	Uses somatization as a main defense.
12.	.81***	Relates to people narcissistically behind a facade of warmth.	Does not relate to people narcissistically behind a facade of warmth.
13.	.60**	Submits to maternal figures.	Does not submit to maternal figures.

* Significant at 10% level; two-tailed test.

** Significant at 5% level.

*** Significant at 1% level.

price of lesser involvement. Thinking is efficient and proceeds without disruption by anxiety (Nos. 1 to 4), expressive needs find their outlet through relatively controlled channels (No. 5), and a basis for steady and adequate personality functioning appears well established (Nos. 6 to 8). Coupled with this is some tendency towards experiencing conflicts internally and psychologically (Nos. 10 and 11). However, the strong correlation with "relates self to people narcissistically behind a facade of warmth" (No. 12), coupled with the trend towards possible blandness (No. 9), suggests that these Ss may achieve their adjustment largely through avoidance, lack of involvement, and minimization of affective experience. Correlation No. 13 ("submits to maternal figures"), though not inconsistent is at some distance from the other correlations; it may suggest possible sources of the contemporary characterological trends.

Ss with poorly integrated use of drive material appear to be characterized by anxiety and disruption. Intellectual processes cannot be used effectively for control and also reflect the disruption of adaptive functions by anxiety (Nos. 1 to 4). Affective life is frequently unpleasant, characterized by anxiety rather than more controlled and positive feelings (Nos. 5 and 9). The picture is one of a personality under constant stress (Nos. 6 to 8).

Although Ss using poorly integrated drive content in many ways present the "sickest" picture, an emotional health-emotional illness continuum does not adequately describe the difference between these two groups of correlations. Rather, the difference lies in the nature of control operations, their effectiveness, and the specific problems that each kind of control generates. While the well integrated use of drive is associated with many reflections of a potential for adequate functioning, there are also tendencies towards avoidance and guilt

—thus, at times a relatively stabilized character structure with neurotic and narcissistic elements. The Ss who use drive that is poorly integrated in the TAT appear to be characterized by: (1) free-floating anxiety and failure of defense (Nos. 8 and 9); (2) resort to somatic rather than psychic expression of conflict (Nos. 10 and 11); and (3) a potential for psychotic thought disorganization (which in fact took place in one of these Ss sometime after this research was carried out).

Table IV presents correlations between the summary scores for level of drive expression and the rankings derived from the Q-sorts. The summary scores for drive level (described above in the section on summary scores) reflect a tendency towards modulated drive expression at the one extreme (high on indirect-disguised drive expression and low on direct-unsocialized drive expression) and towards unmodulated drive expression at the other (low on indirect-disguised drive expression and high on direct-unsocialized drive expression). A ranking based on level II scores alone (direct-socialized drive expression) did not tend to give significant correlations.

Ss who modulate the level of drive expressed appear to be characterized by a relatively balanced relationship between expressive and control processes. This is reflected in a relatively free intellectual and esthetic expressive style (Nos. 1 to 4), a flexible identity (No. 5), non-competitive peer relationships (No. 6), and adequate controls over impulses (No. 7). There seems to be both a tendency and a capacity to experience and work through conflicts internally; fantasy and activity stemming from the self (Nos. 8 and 9) rather than introjection of aspects of the external environment (No. 10) are used to cope with feelings and impulses. Coordinate with this is a tendency to experience conflict within the self (No. 11). The over-all picture is of a relatively free intellectual capacity and an in-

TABLE IV. Rank Correlations between Summary Scores for Level of Drive Expression and Personality Variables

	Rho	Characteristics of Ss with Modulated Drive Level	Characteristics of Ss with Unmodulated Drive Level
1.	.57**	Skilful and orderly reasoning.	Thinking is vague and fuzzy, with neologisms and distortions.
2.	.70***	Thinking is neither naive nor conventional.	Thinking is naive and conventional.
3.	.49*	Does not use words pompously, stiltedly, ostentatiously.	Use of words is pompous, stilted, and ostentatious.
4.	.51*	Intellectual-esthetic creativity; high need understanding, need sentence, need construction.	Low intellectual-esthetic creativity; low need understanding, need sentence, need construction.
5.	.64**	Self concept not rigid.	Self concept rigid.
6.	.64**	Does not compete punitively with peers of same sex.	Competes punitively with peers of same sex.
7.	.52*	Fear of losing control over sexual impulses is minimal.	Fear of losing control over sexual impulses is strong.
8.	.61**	Aggressions are pent up and dominate fantasy.	Aggressions are not pent up and do not dominate fantasy.
9.	.52*	Redoubling of efforts when depressed.	Helpless reaction to stress.
10.	.56**	Does not use introjection as a main defense.	Uses introjection as a main defense.
11.	.53*	At odds with self and has major internal conflicts; feels isolated, special, or unusual.	Not at odds with self; does not feel isolated, special, or unusual.

* Significant at 10% level; two-tailed test.

** Significant at 5% level.

*** Significant at 1% level.

ternal experience of conflict.

Ss using unmodulated drive expression show two kinds of characteristics which may be conceptualized as reflections of a tendency towards impulsive discharge and mechanisms of adjustment to this. The tendencies towards discharge are indicated in competitive social relationships (No. 6), loose thinking (No. 1), a fear of loss of control (No. 7), and the absence of a tendency to discharge impulses in internalized ways, such as fantasy (No. 8). Coupled with this is a weakening of the inner resources for control either through intellect (and sublimation) (No. 4) or through other defenses (No. 9). The protective and adjustive mechanisms all have a character of brittleness and pretense as though "fastened on" without having been produced by an ego successfully in control of impulses. These include a rigid and conventional self concept

(Nos. 5 and 11), resort to external bases for control through introjection (No. 10), and a tendency towards seemingly-safe thinking (Nos. 2 and 3).

Thus, although tentative, the correlations with the personality variables are in general accord with a priori expectations. The one exception to this is the better correlation of the generally adaptive syndrome of correlations with highly modulated drive content than with level II (direct-socialized) drive content. Correlations with the levels and integration scores, each of these conceptualized as an index of ego control, present over-all pictures in some ways similar to one another—and this in spite of the fact that the levels and integration rankings are statistically independent (ρ is only .14). In fact, all three major summary scores are unrelated statistically; total drive presence correlates with drive integration .10 (ρ) and

with drive level .09 (ρ). The scores thus have some measure of reliability, validity, and independence.

SUMMARY

The present paper describes and illustrates a manual for rating the use of drive content in TAT stories. The manual was developed (and successfully applied) in a research context and is geared primarily to research uses. The rationale for all rating and scoring derived from psychoanalytic theory, and particularly from "ego psychology"; a theoretical rationale for all major scores is presented.

Three main types of ratings are described. The first of these represents the total number of reasonably direct derivatives of aggressive and libidinal drives which appear in ideational form in the manifest content of the TAT stories. The second two ratings, reflecting the degree to which drive content is integrated into the stories and the degree to which drive content is modulated in intensity and socialized in aim, were conceptualized as indices of ego control over drive expression. Various scores for summarizing the ratings were described.

Material supporting the general independence, inter-rater reliability, and validity of the main scores was also presented.

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Types of Movement in Children's Rorschachs

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One of Piotrowski's (1957) intentions has been to give interpretations to Rorschach determinants which lend themselves to empirical test. This study centered on that aspect of perceptanalytic theory concerning movement responses. Piotrowski interpreted human movement (*M*) as tendencies to assume the same attitude in dealing significantly with others; animal movement (*FM*) as tendencies which influence overt behavior only in states of lowered integration or diminished consciousness, e.g., intoxication or fatigue; inanimate movement (*m*) as tendencies which the person feels are desirable but unattainable and which thus are never acted-out.

The "tendencies" of the movement responses were said to be primarily indicated by three types of action. Extensor movements were characterized by overcoming the force of gravity and expanding in space; they were interpreted as tendencies toward self-assertion. Flexor movements were characterized by giving-in to gravity and/or shrinking in space; they were interpreted as tendencies toward compliance. Blocked movements were characterized by tension or acting in opposite directions; they were interpreted as tendencies toward indecisiveness.

Drawing from his interpretations, Piotrowski stated, "Since the *M* and *FM* tendencies press for outward manifestation and the *m* tendencies do not, the life roles expressed by the *m* are incompatible with the life roles disclosed in the *M* and *FM*. Consequently, the types of movement in the *m* should always be different from the movement types of the *FM* and particularly of the *M*." (1957, p. 211).

This last statement was supported by the analysis of a few Rorschach protocols and little else. While Piotrowski recognized the lack of empirical verification, he explained that it was due to the rarity of the occurrence of *m* as a determinant. The purpose of this study was to test his hypothesis using Rorschachs obtained from children referred to a child guidance clinic. The hypothesis states: If a child's *m* is of the extensor (flexor, blocked) type, then his *M* and *FM* are not of this type.

Although Piotrowski formulated his theory largely on the basis of work with adults (1952), it was considered appropriate to test his hypothesis using a sample of children for two reasons. First, Piotrowski presented his hypothesis in the form of a universal generalization, i.e., it is unqualified and is thus supposed to be predictive of all Rorschachs regardless of the age of the person taking the test. Second, Piotrowski's ideas about movement have been used to interpret the records of children (Ames, Learned, Metraux & Walker, 1952) and it was of importance to try to determine whether such use of his theory was valid.

METHOD

Rorschachs were obtained from folders of children referred to a child guidance clinic. For inclusion in the sample, the child had to be evaluated as of at least low average intelligence. Also his protocol had to contain at least one *m* and one *M* or *FM* which were identical with or highly similar to the examples which Piotrowski furnished of extensor, flexor, and blocked types of movements (1957). Accordingly, a large number of movement responses were eliminated from

consideration. While this procedure tended to bias the results in favor of supporting the hypothesis, it was considered more justifiable and fair to the testing of the hypothesis than arbitrarily classifying ambiguous or complex responses.

From 80 Rorschachs, only 24 were found which satisfied the above criteria. In this sample, there were 17 boys and 7 girls. Ages ranged from 6-15 with a mean of 10 years. IQ scores ranged from 81-131, with a mean of 105. None of the children was considered psychotic but all were considered to manifest some form of psychiatric disturbance. While it was recognized that this sample was far from homogeneous, it should again be pointed-out that Piotrowski's hypothesis was unqualified and would thus be applicable to all Rorschachs.

To test for reliability, all movement responses used in the study were extracted from their records. They were then written verbatim in a random order so that it was impossible for judges to know which responses belonged to the same record. This was done to minimize any effects of bias for or against the hypothesis. Two judges experienced in the use of the Rorschach categorized all the responses as to type using the same criteria employed by *E*¹. Judge A and *E* had 90% agreement; there was 80% agreement between Judge B and *E*; there was 85% agreement between the two judges. Disagreements occurred mainly in the categorizing of what *E* considered to be blocked type responses.

As a measure of intra-judge reliability, three months following his original categorization, *E* rescored all responses as to type. There was 97% agreement between the two scorings.

RESULTS

The twenty-four children produced a scorable total of 22 extensor, 9

flexor, and 5 blocked *M* responses; 22 extensor, 2 flexor, and 2 blocked *FM* responses; and 23 extensor, 9 flexor, and 2 blocked *m* responses. These results were in agreement with Piotrowski's clinical impression that the majority of *m* responses were of the extensor type and with the findings of Ames, et. al. (1952) that the extensor type movement was more frequent than the flexor in the records of children. Within the sample, there were no marked or statistically significant differences in types of movements produced between boys and girls, children above and below ten years of age, and children above and below an IQ of 105.

According to the hypothesis, if a child's *m* was of one type, then his *M* and *FM* should be of another type. Of the 24 records, 19 of them on the basis of *E*'s scorings, 18 on the basis of Judge A's, and 21 on the basis of Judge B's had *m* and *M* or *FM* responses of the same type. These results were in direct opposition to what would have been predicted from the hypothesis.

Since Piotrowski emphasized the differences in type between *m* and *M*, the hypothesis was reformulated: If a child's *m* is of the extensor (flexor, blocked) type, then his *M* is not of this type. Two records contained no *M*. Of the 22 records which did, 15 according to *E*, 16 according to Judge A, and 18 according to Judge B had *m* and *M* responses of the same type. Again the results were directly opposite to that predicted by the hypothesis. Furthermore, if it had been predicted that a child's *m* is of the same type as his *M* or *FM*, this hypothesis would have been supported ($X^2=7.04$; $P<.01$).

DISCUSSION

The findings of this study not only fail to support Piotrowski's interpretation of *m* but are directly opposite to what would have been expected from his hypothesis. It might be argued that the results were biased in

¹ The author wishes to express his appreciation to Dr. Bernard Aronov and Mrs. Gladys Broude, who served as judges.

opposition to the hypothesis since the records may have contained many instances where *M* or *FM* or *m* responses were of more than one type. However, only 8 of the 24 records had *M* or *FM* or *m* responses of more than one type and even among these 8 were found two of the five which, according to *E*, were in accordance with the hypothesis. Therefore the majority of the records had movement responses which were either exclusively extensor or flexor.

These findings are limited in that the sample consisted of disturbed children. Whether similar results would have been obtained had a sample of "normal" children or adults been used is open to question. However the findings of Ames, et. al. (1952) would lead one to expect that similar results would be found with a sample of "normal" children. If nothing else, the results of this study indicate that Piotrowski's interpretation of *m* responses is not applicable to the analysis of Rorschachs of disturbed children, i.e., that *m* in these children is not indicative of tendencies which the child feels are desirable but unattainable. On the contrary, the majority of the children in the sample were referred precisely, because they did express only too well their *m* tendencies. What the results suggest is correspondence or positive correlation between the types of movement of *m*, *M*, and *FM* in children. They further serve to point-up the questionable validity of analyzing children's Rorschachs on the basis of the same "nuclear" interpretations of

test variables as used with adults (Klopfer, et. al., 1956).

SUMMARY

On the basis of Piotrowski's interpretations of movement responses, the following hypothesis was tested using a sample of Rorschachs obtained from 24 disturbed children: If a child's *m* is of the extensor (flexor, blocked) type, then his *M* and *FM* are not of this type.

This hypothesis was not supported. On the contrary, the results supported an opposite view that, with disturbed children, if a child's *m* is of the extensor (flexor, blocked) type, then it is highly probable that his record contains *M* and *FM* of this type. It was concluded that Piotrowski's interpretation of *m* is not applicable to the analysis of the Rorschachs of disturbed children. The results further served to emphasize the questionable validity of using the same "nuclear" interpretations of Rorschach test variables with both children and adults.

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Inquiry: Partial or Total

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In a recent article by Feldman (1958) the important caveat is advanced that the blanket interpretations which form part of psychoanalytic theory must finally depend upon the patient's own associations. Feldman writes: "I use this term (blanket interpretation) for interpretations that may be valid and correct when applied to certain analytic material at the proper time, but that are often misapplied by indiscriminate use . . ." (p. 206.)

Thus symbols, protestations, negations and wishes may or may not always represent what we believe they represent in terms of classical psychoanalytic theory. Freud (1910) among others, has offered ample evidence to indicate that interpretation of symbolic content, fantasies, wishes, etc., without the patient's associations, may lead to difficulties because: 1. The patient may not be ready to cope with such interpretations and, 2. Symbols, devoid of the individual's associations, may not always represent what we think they do. The concern of this paper is with the second of these and particularly with respect to Rorschach testing.

The increasing tendency to emphasize Rorschach content has been noted by Piotrowski:

It has recently become the practice to concentrate upon an analysis of the pictorial content of perceptanalytic responses or the verbal form in which they are expressed rather than upon an analysis of the Rorschach record in terms of formal aspects. Many psychologists never score their Rorschach records and rely almost solely upon content analysis. (1957, p. 324)

Brown (1953) and Lindner (1956) have chosen responses which were given to particular blot areas and offered interpretations of the content of such responses. Phillips and Smith

(1953) have offered interpretations to certain animal, human and inanimate contents regardless of the blot area involved. These authors have qualified their suggested interpretations indicating that content interpretation be viewed as part of the total personal, behavioral, and test constellation. However, these authors have been criticized for their methods of supporting their content interpretations by referring to such poorly defined concepts as "empirical correlation" and "normative data." (Charen, 1953; Schafer, 1954.) Thus, Schafer (1954, p. 118) writes:

So long as they (Phillips and Smith) support their claims by reference to data, these authors cannot be criticized for carrying on "wild analysis" but one wonders at the nature of "normative data, however unrefined" that can organize such a multiplicity of complex and elusive trends and observations around single response categories.

It seems to this writer, however, that the emphasis upon obtaining sufficient statistical data to support a particular interpretation of a particular content on the Rorschach is not the issue, but rather reflects a misplaced emphasis and makes a fetish of objectivity. It is akin to arguing that if a great many patients view a spider as the symbol of the wicked mother, that we are justified in making the blanket interpretation covertly or overtly that whenever the spider symbol arises, it represents the wicked mother. However, as Feldman (1958) indicates, this need not always be the case and must finally depend upon the patient's associations.

On purely logical grounds, such blanket interpretations lead to a cycle of repeatedly furnishing evidence to support one's ideas rather than enabling us to correct ideas which may

be of limited validity or productivity.

More important, however, is the question as to whether the Rorschach is viewed as an instrument which we seek to make objective with stereotyped definitions of formal (scoring) and content categories, or one which we seek to enable us to comprehend and grasp the unique characteristics of a unique individual to the greatest possible extent. It is true, of course, that the hurried clinician will find it quicker and easier to inquire only enough to satisfy his scoring requirements and then in writing his report to refer to a standardized list of interpretations. We are faced with a situation in which the more objective and standardized we make the Rorschach, the less unique information we obtain; the more subjective and open-minded we make the Rorschach, the more unique information we obtain.

This is not to question the notion that in many or even in most instances a particular content may represent a particular interpretation. The point is that this need not always be the case and we run the risk of error and/or of losing a wealth of material about our patients if we confine ourselves to usual or stereotyped interpretations.

The final interpretation of content material depends upon the associations that can be obtained from the patient. In the case of the Rorschach such associations can best be obtained during the inquiry. While we are warned against over-inquiring or asking leading questions, this is not to deny that once the formal requirements for scoring the response are obtained (i.e., location, determinants, content category), it is possible to find out more about the meaning of a particular response.

A few examples may be in order. A twenty-year-old female patient offered several responses which included the content, hair. It would have been a simple matter to conclude that her emphasis upon hair reflected virility

strivings and feelings of impotence. However, her elaborations indicated that to this young woman, hair represented a major bone of contention between herself and her mother, who constantly criticized and degraded her hair style.

Critics might respond to this by stating that the patient's arguments with her mother must represent the virility strivings suggested at first glance. No one can deny, however, that there is a vast difference between the general term "virility," on the one hand, and all the nuances which emerged about the mother-daughter relationship, on the other hand.

Another striking example is shown in the popular butterfly response to Plate I. On inquiry, it is seen as a butterfly that is flying and includes the entire card. At this point, inquiry could be dropped with a W, FM, A, P scoring. However, when the patient is asked what the butterfly brings to mind, the following associations are obtained: "It looks like a butterfly that is falling apart, jagged. (Q. How did it happen?) Like it got caught in something and was fighting and got torn. It looks like it was trying to fly away, to get away."

Here, again, inquiring rather than simply accepting a response as given, proves to be extremely helpful. While nothing new about the exact meaning of "butterfly" is obtained, it is interesting to note that this patient was raised in an orphanage from which she had attempted to escape on several occasions. Upon being returned, she received severe physical punishment resulting in permanent scars. It is very possible that the butterfly here rather than meaning anything in particular as an animal content may well have represented this girl's reactions to a restricting situation such as may have been presented by the first Rorschach plate and which may, in turn, also have been associated in her mind with her stay in the orphanage, the physical abuse, and the desire to escape. How much more meaning-

ful this response is than might appear at first glance. Brown's interpretation of the "frayed butterfly" to Plate I (Brown, 1953, p. 259) certainly is very appropriate here, but does not nor could it be expected to highlight the nuances in this particular case.

Phillips and Smith's (1953, p. 120) comment concerning the "butterfly" content—"A popular content, hence one not useful in differentiating among normals"—does not touch upon the possibilities in this case. This is all by way of saying that there is no substitute for a thorough inquiry.

To summarize: The notion is advanced in this paper that stereotyped content analyses of Rorschach responses based upon normative data is not very different from making blanket interpretations in dream analysis or in psychotherapy. This procedure is indefensible in the psychotherapeutic process and it is suggested that it is just as indefensible in the testing situation. While leading questions and over-inquiring concerning the formal aspects of the Rorschach are to be avoided, it is suggested that the patient's associations to some or most content given on the Rorschach is usually very helpful in enabling us to understand much more about the

patient. It is also suggested that while normative data on content are interesting and helpful from an experimental and learning point of view, at the present time when the Rorschach is used as a diagnostic test instrument in individual cases, the most valid findings are to be gleaned from the patient's own associations obtained during the inquiry.

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Womb Fantasies in Heroin Addiction: A Rorschach Study

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During the past thirty years only three groups of investigators have used projective tests to study the personality factors that characterize drug addicts. The first to report findings were Merseur and Funderburg (1947) who did a case study on one addict. Little was done with the projective material, however. The patient was described as an immature, inadequate, impulsive, and unstable individual, with a verbal facade, who let herself be easily influenced by persons and circumstances.

Test findings on groups of addicts were presented by Zimmering, Toolan, Safrin, and Wortis (1951; 1952) and by Knight and Prout (1951). A series of surface personality variables were described as characterizing the addicts. The only characteristics that were reported by both groups of authors were: easily evoked anxiety, a narcissistic orientation, feelings of inadequacy, and the absence of a solid masculine identification. The results were presented in summary form with no evidence offered for the conclusions drawn. The failure to present evidence was a particularly serious error since "blind" evaluations of the test material were not made and systematic comparisons with control groups were not reported. Thus, these findings until checked in a much more rigorous manner, are open to serious question.

A methodologically sounder piece of research was reported by Gerard and Kornetsky (1955) who studied a group of addicts to test hypotheses that they had formulated in an impressionistic manner in two earlier papers (1954a; 1954b). Thirty two

adolescent addicts at Lexington, Kentucky were given Rorschach and figure drawings which were compared with the test results of 23 controls. The control subjects were similar to the addicts in age, ethnic background, and exposure to opiate use in their communities. The Rorschachs were appraised in terms of signs only. Significant differences between the two groups for certain signs were said to indicate that comparatively speaking, "the addicts showed little ability to respond with fantasy or with emotionally determined material . . . the addicts lack the richness and variety of resources necessary to function in novel unstructured or stressful situations" (1955, p. 466). A comparison of the figure drawings of the two groups revealed that the addicts showed greater regression in projection of their body image, greater rigidity, fewer "normal" drawings and fewer indications of culturally acceptable roles than did the controls. This study, however, has a major methodological weakness. The control subjects were *paid* for participating in the study while the addicts were not. Many of the variables for which significant differences were found (e.g. number of R, M, and Sum C on the Rorschach and degree of differentiation of the figure drawings) may well have been a function of the resulting difference in motivation of the two groups. Also, although all the subjects were given psychiatric diagnoses, the two groups were not equated for degree of pathology. The addicts were much sicker as evidenced, for example, by the fact that 50% were diagnosed as schizophrenic while this was

true of only 22% of the controls. Thus the most that could be said on the basis of their findings was that drug addicts show a greater number of test signs of psychopathology than do non-drug addict, non-psychiatric patient controls. No legitimate claim could be made for the unearthing of specific personality variables that differentiate drug addicts from other kinds of equally disturbed individuals.

In the current research, an attempt will be made both to correct the methodological flaws of the earlier studies and to deal with more specific personality variables than have heretofore been attempted.

Procedure:

This research was initiated when one of us (LHS) was employed as staff psychologist at the Psychiatric Clinic of the Court of Special Sessions of the City of New York. During one period of time he had occasion to clinically evaluate a few heroin users via psychological tests. In their Rorschachs he noted what seemed to be an extensive amount of imagery that seemed to refer symbolically to properties of the intrauterine state. This finding led him to examine the Rorschach records of other heroin users he had tested in the past. Altogether 13 records were examined and the number of responses of the kind just described seemed much greater than patients usually give. In order to determine if this impression was valid and one that would stand up to a rigorous test, the following controlled study was undertaken.

Selection of Cases: The Probation Department of the Court of Special Sessions was asked to refer all heroin users that came under their jurisdiction to the Psychiatric Clinic for Rorschach testing¹. (We decided to elimi-

nate any subjects who gave fewer than ten responses, but in only a few cases was this necessary.) Thirty Rorschachs were collected, all of males who had committed crimes that brought them to court where they were eventually placed on probation. All used heroin intravenously and the shortest duration of time that the drug had been taken was two months by one subject, and he had taken five or six shots a day. One half of the subjects admitted using heroin for at least one year. The age, race, education, and diagnosis of each of these subjects are presented in Table I.

The 30 control Ss were also young adult males who had committed crimes that brought them to court where they were placed on probation and referred to the Psychiatric Clinic for evaluation. These non-drug-users (as attested to by the subject and his probation officer) were also persons for whom heroin was readily accessible. This criterion was thought necessary because we assumed that the determination of who becomes a drug addict is based on degree of accessibility of the drug as well as on personality factors. In order for a subject to be considered as someone to whom drugs were readily accessible either of two criteria had to be met: Criterion I: The youth was a member of a "gang" in which at least a few of the members were heroin users. In this environment he had every opportunity to take heroin and other drugs but never did. Eight subjects met this criterion.

Criterion II: The youth lived in a part of the city in which large numbers of drug users are known to reside. Manhattan is divided into about 90 health areas and a listing has been made of those areas in which the greatest proportion of cases of drug usage have been reported on the court

¹ We would like to express our gratitude to Mr. Alfred Cappisillo of the Probation Department of the Court of Special Sessions and to the probation officers under his charge, and to Mr. Edward Preble, group

worker, currently affiliated with the New York School of Psychiatry for their cooperation in helping us secure subjects for this study.

dockets from 1952 to 1955². The 22 subjects who met criterion II had all resided for years in one of the thirteen health areas in which there was the highest proportion of such arrests. Thus, it seemed reasonably safe to assume that they too could have taken drugs if they so desired.

It was further thought desirable that the control subjects chosen should be similar to the heroin user group in age, race, education, and diagnosis. In large measure this goal was accomplished (see Table I).

Some of the control records came from subjects who were especially tested for the purpose of the research. Other records were taken from the files of patients who had already been tested at the clinic. In the latter cases, attempts were made to choose records that matched the heroin user records for total number of responses as well as satisfying the other criteria already described.

Method of Scoring the Rorschach Content: All the Rorschachs were administered by one of us (LHS) who knew which records were given by heroin users and which by controls. Thus, in order to prevent bias from entering into the scoring of the records, the other author did all the scoring without her knowing the group from which they came.

We decided, before the study proper was undertaken, to have each Rorschach record scored for two main content themes which we hypothesized would differentiate the heroin user group from the control group. The rationale for the analysis of Rorschach content in terms of themes has been aptly presented by Schafer (1954, pp. 114-139).

Category I included those responses that we judged to involve imagery that symbolically (or directly) referred to properties of the intra-uterine state. Responses in this cate-

TABLE I—Age, Race, Education and Diagnosis of Heroin and Control Groups

	Mean Age	Race		Puerto Rican	Mean Years of Education	Schizophrenia	Diagnosis		
		White	Negro				Personality Disorder	Psychoneurosis	No Psychiatric Condition
Heroin Users (N-30)	19.8 (range 17-27)	9	9	12	9.9	3	22	4	1
Controls (N-30)	18.9 (range 16-26)	9	10	11	9.8	3	24	2	1

² This information has been compiled in a book on drug addiction by I. Chein, D. Gerard, R. Lee, and E. Rosenfeld which is currently in preparation.

gory fell into four subcategories: (1) responses involving enclosures or living things in enclosures; (2) responses involving living things that were joined to other living things; (3) responses involving bodies of water, or things that were submerged in water or that habitually reside in water; (4) miscellaneous responses that were thought to have aspects with symbolic intrauterine meaning that could not be scored under any of the three aforementioned subcategories.

A score of "2" was given to a response if it was felt that it almost certainly belonged in one of the four subcategories. A score of "1" was given if it was thought likely that the "enclosure", "joined together", "water", or "miscellaneous intrauterine" implications were not essential in determining the response. Examples of responses scored as "2" and "1" are given below for each of the four subcategories under category I.

1. "Enclosures": Scored "2" — "womb", "caves", "vase", "cocoon", "house", scored "1", "volcano", "rocket", "plane", "vagina".
2. "Joined Together": Scored "2" — "lambs . . . like they're stuck together", "Siamese twins", "(animal) head . . . seem like two and they're joined together here". Scored "1" — "elephant trunks — they're tied up and they can't get away", "some sort of cancer — malignant growth . . . looks like they're all attached and they have to be cut".
3. "Water": Scored "2" — "fish swimming", "seaweed . . . growing in the water", "tropical fish", "a river". Scored "1" — "beaver", "alligator", "octopuses . . . fighting", "turtle face".
4. "Miscellaneous": Scored "2" — "looks like darkness — looks very deep to me — like a very black cloud . . . like I was very high and deep", "white part looks like an egg inside . . . it's buried somewhere". Scored "1" — "a very fat person" (possible reference to pregnancy), "toads . . . feeding at the tree" (a possible reference to parasitic activity), "a moth or butterfly . . . absorbing sunlight" (references to sun and fire were thought to be possible references to the warmth of the intrauterine state.)

Category II included responses that involved other highly regressive imag-

ery but without symbolic reference to the intrauterine state. Unlike category I, the expectation of differences here was not based on any striking impression that the original 13 records made in this regard. Instead, we felt that, since we had this opportunity to evaluate the records of heroin users and those of carefully matched controls, it might be fruitful to compare them for indications of other highly regressed needs. Another reason for our undertaking this line of inquiry was that many clinical workers have reported that in various ways drug addicts are highly regressed. Responses in this category also fell into four subcategories: (1) responses with oral-receptive connotations; (2) responses involving humans or animals in passive states; (3) responses involving physical contact between humans or animals; (4) miscellaneous responses that were thought to have aspects that were highly regressive which could not be scored in any of the three aforementioned subcategories.

Responses were again scored "2" or "1" depending on how confident the scorer felt that the particular responses had a particular meaning. Examples for the four subcategories under Category II follow:

1. "Oral-Receptive": Scored "2" — "fried eggs", "dogs . . . nursing their mother's breast", "a stomach". Scored "1" — "crab", "woman's breast", "a fat lady" (only scored "1" because it could instead have pregnancy implications).
2. "Passivity": Scored "2" — "crocodile . . . resting", "seals . . . sitting down", "butterfly . . . relaxing". Scored "1" — "body of a pig . . . as if turned over and feet were reaching up in air", "spiders . . . like clinging on to something", "persons going to sit down".
3. "Physical Contact": Scored "2" — "two dogs kissing", "two bears, it looks like they're rubbing noses", "two figures dancing . . . hands holding together". Scored "1" — "two people dragging another person", "two old men . . . back to back", "two kinds of animals — they're close together".
4. "Miscellaneous": Scored "2" — "babies", "caterpillars", "my birthstone", and "a

woman giving birth". Scored "1" — "a bird . . . nothing existing — maybe something a million years ago", "prehistoric birds", "dinosaurs" (these and other responses involving prehistoric animals were thought of as possibly referring to preverbal feelings or impressions), "animals with their heads out of the ground yelling" and "a bee coming out of a hole" (the last two examples were thought to be possible references to the birth process).

The two main categories and the eight subcategories were not designed to be mutually exclusive. Many responses fell into two or more subcategories even within the same main category.

After scoring the responses of a particular record, the "blind" evaluator made an overall judgment as to whether she felt that the particular record was that of a heroin user or a control. She used as her criterion her global impression of the Rorschach. This impression, in large measure was based on the presence of intrauterine responses (Category I) since it was the large number of these that seemed to uniquely characterize the records of the 13 heroin users in the pilot study.

In making overall judgments each record was classified in one of four ways: (1) heroin user, (2) control, (3) don't know, but a forced choice would be heroin user, (4) don't know, but a forced choice would be control.

Three hypotheses are thus being tested in this study: Hypothesis I: The heroin user group will produce significantly more responses of the kind described as having intrauterine implications than will the control group. Hypothesis II: The heroin user group will produce significantly more responses of the kind described as having highly regressive implications of other sorts than will the control group. Hypothesis III: When heroin user and control records are evaluated globally, they can be distinguished from each other to a degree greater than that expected on the basis of chance.

Results:

Since the difference between the average number of responses for the heroin user and control groups (27.9 and 26.4 respectively) does not even approach significance, the absolute number of responses falling into the various categories can be compared for the two groups.

The results bearing upon Hypothesis I are reported in Table II. The difference between the means for the two groups for Category I as a whole is significant at the .02 level (one-tailed test). When each of the four subcategories is considered separately, for subcategory 2 the means are the same, while for the other three subcategories, differences are in the predicted direction. However, only for subcategory 3, which has by far the greatest number of responses, does the *t* value reach significance.

The results bearing upon Hypothesis II are presented in Table III. The total scores and the subcategory scores are all in the predicted direction, but the differences are not significant. However, the difference in the total score yields a *t* that would be significant at the .10 level. Thus, the data indicate a *tendency* in the direction predicted by Hypothesis II³.

It should also be mentioned that an attempt was made to isolate those responses from subcategory I (oral-re-

³ We believe that our use of non-heroin using *delinquents* as controls was responsible for Hypothesis II being only very weakly supported by our results. The great majority of our controls would be classified as "acting out" personalities or as impulse neurotics. These groups have been frequently described in the literature as orally fixated and as possessing other primitive characteristics. Thus, the heroin users may have given an unusually large number of responses in Category II, but because the control group was in many ways similar to them, they too, gave an unusually large number of these responses. If our premise is correct, an examination of the Rorschach records of control subjects who are *not* delinquent should reveal a significantly fewer number of Category II responses than were given by either the experimental or the control group used here.

TABLE II—Mean Scores for Heroin Users and Controls for Category I (Intrauterine Responses)

	"Enclosures" Subcategory	"Joined Together" Subcategory	"Water" Subcategory	Miscellaneous Subcategory	Total Category I
Heroin Users	1.9	.4	4.6	.8	7.7
Controls	1.3	.4	2.6	.6	4.8
Difference	.6	0	2.0	.2	2.9
t	1.06	less than 1	2.03**	less than 1	2.21*

* Significant at .02 level
** Significant at .025 level

TABLE III—Mean Scores for Heroin Users and Controls for Category II (Other Highly Regressive Responses)

	"Oral- Receptive" Subcategory	"Passivity" Subcategory	"Physical Contact" Subcategory	Miscellaneous Subcategory	Total Category II
Heroin Users	3.9	1.3	1.3	1.4	8.0
Controls	3.4	.9	1.2	.9	6.4
Difference	.5	.5	.1	.5	2.4
t	less than 1	less than 1	less than 1	less than 1	1.36*

* $p < .10$

TABLE IV—Global Predictions of Heroin Users and Controls

TABLE IV						
Actual Status	Predicted Status					Total Control
	"Heroin User"	"Don't know but forced choice would be heroin user"	Total Heroin User	"Control"	"Don't know but forced choice would be control"	
Heroin Users	12	8	20	6	4	10
Controls	2	6	8	13	9	22

ceptive) that were thought to refer to the nursing process. References to breasts, lips, milk, or milk products, nursing, drinking, and milk-giving animals were included. However, here too there was no significant difference between the two groups.

The results bearing upon Hypothesis III are reported in Table IV. When all the judgments are considered, 42 of them were correct and 18 incorrect. Twenty heroin users and 22 controls were labeled correctly and eight heroin users and ten controls were labeled incorrectly. Thus, there was 70% correct labeling compared to the 50% which would be expected on the basis of chance. These results produce a chi-square which is significant at the .01 level.

When the "don't know but forced choice" judgments are excluded, 33 cases remain in which the evaluator

felt reasonably sure of her predictions. She was correct in 25 or 76% of these. Twelve heroin users and 13 controls were labeled correctly and two heroin users and six controls were labeled incorrectly. This time, Fisher's exact probability test was applied and the results were significant at the .005 level. Thus, Hypothesis III is strongly supported by the findings of this study⁴.

⁴ A possible methodological flaw in this study should be noted. Because of the occasional lack of clarity in the handwritten records, the author who did the testing (LHS) was present when the other author evaluated the Rorschach records. It is possible that unwittingly DKS was cued as to which records came from heroin users and which from controls. We strongly doubt that this had any appreciable effect on the results. For, not only did the somewhat subjectively made global judgments discriminate between the two groups, but the more objectively scored Category I responses similarly

A *post hoc* reevaluation of the scoring categories was undertaken, in the hope of sharpening the categories for future research. It was discovered that had scores been assigned more conservatively, the differences between the two groups for some of the categories would have been substantially greater. In the "water" subcategory, had only the two-point responses been considered (i.e. where there was great confidence in the meaning of the response) heroin users would have had a mean score of 3.1 and the controls of 1.4. This would have increased the *t* value from 2.03 to 2.2, the latter figure being significant at about the .015 level while the former was significant at the .025 level. For the "enclosures" subcategory, we discovered that it would have been more fruitful to omit scores for such responses as jet, rocket, coal mine, vagina, castle peak, antique vase, and volcano. Upon reevaluation, these responses seemed to us to have other implications that were probably stronger than that for enclosure. If this had been done and only responses with more certain enclosure implications had been included (caves, houses, shell animals, valleys, flower pots, boats, animals in holes, bushes, or boxes, cocoons, and nests), the mean score for the heroin users would have been 1.6 compared to a mean score of .7 for the controls. This would have raised the *t* value from 1.06 to 2.6. The former figure was not significant, while the latter is significant at the .015 level.

Other *post hoc* observations were noteworthy: (1) Under category I, five direct references were made to an intrauterine state (four of "womb" and one of "embryo") and all by members of the heroin-user group. (2) In the "physical contact" subcategory responses of "animals kissing" or "rubbing noses" were given ten times and in all but one instance, they were given by the heroin users.

differentiated. However, ideally the methodology should be planned so that this possible source of bias be eliminated.

(3) In the "miscellaneous" subcategory under Category II one subject perceived "a woman giving birth" and seven others gave responses that seemed to denote the birth process symbolically. Six of these eight subjects were heroin users. Also five subjects gave "caterpillar" responses and all of these were heroin users.

The figures quoted in the last two paragraphs cannot be taken as supporting any of the hypotheses, since the modifications in the scoring categories were made *after* the results were in. Cross-validation on new groups of heroin users and controls would be needed before it could be stated how valuable the new criteria would be.

Discussion:

The observations made as a result of perusing the Rorschach records of the original group of 13 heroin users has been borne out in this study of 30 additional heroin users and 30 controls. The heroin users gave significantly more Rorschach responses involving imagery that symbolically refer to properties of the intrauterine state and which therefore can be taken as reflecting the presence of noteworthy unconscious womb fantasies.

Before any conclusions are to be drawn, the cases that did not conform to expectation shall first be discussed. Since we believe that global judgments allow for the most effective use of the Rorschach, it is the result of these that we shall concern ourselves with here. In these judgments, eight controls were incorrectly classified as addicts and ten addicts were incorrectly classified as controls. The presence of responses suggesting womb fantasies in the eight controls is not surprising. For in addition to the obvious consideration of the fallibility of any clinician evaluating a Rorschach, two other factors could have been anticipated as leading to these erroneous predictions. The first is that when Rorschach content is analyzed in terms of a theme, a one to

one correspondence between that theme and a particular pathological condition is not to be expected. In the case of drug addicts, we are only suggesting that the presence of womb fantasies is *one* aspect of their psychology. No doubt much more is involved. Rado (1926, 1933), Glover (1933), and Szasz (1958) have reported on other essential elements in their makeup. Womb fantasies in other constellations can lead to other kinds of pathology and claustrophobias (Lewin 1935) and asthmatics (Alexander 1941), in particular, have been described as having these kinds of fantasies. It is certainly possible that at least some of the eight controls incorrectly identified, did have noteworthy womb fantasies, but did not possess the other personality elements that are necessary in making one a heroin user.

Second, it is possible that some of the responses designated as having intrauterine implications had a different meaning to the patient giving them. Unlike the interpretation of symbols in dreams, the patient's own associations to his productions are usually not elicited in Rorschach testing (except for what may emerge during the formal Rorschach inquiry) and no deliberate attempt was made to elicit associations in our study. In order to avoid making "wild" interpretations the common denominator in sets of unusual responses is therefore sought. However, some records do not allow for an effective utilization of the "common denominator" principle since too few atypical responses are given and it is particularly with these that the mislabeling of a theme can occur.

While the occurrence of some records resembling those of heroin users among the controls could thus have been logically anticipated without contradicting the idea that womb fantasies are essential to the psychology of the heroin user, the mislabeling of ten heroin users as controls could not. Is it necessary to account for this sizable number of erroneous predictions

by raising the issues of the fallibility of the Rorschach test or the particular clinician who evaluated these records, or by modifying the idea that womb fantasies are *always* present in heroin users. We think not. For further analysis of the results reveals two highly interesting and crucial findings. First, among the 30 heroin users, ten of them had been using the drug for a relatively short period of time (from 2 months to 8.5 months, with a mean of 5.4 months.) The other 20 had been using drugs for a much longer period of time (from one to 6 years with a mean of 2.8 years). Six of the ten heroin users who were mislabeled as controls came from the first group. Second, five of the subjects from the heroin user group had been "off" drugs for a very lengthy period of time when they were given the Rorschach (from 1.5 to 5.5 years with a mean of 2.5 years). Not one of the other 25 was off drugs for more than 8.5 months at the time he was tested. The mean amount of time that the latter group had refrained from taking the drug was 2.2 months. The difference between these two groups was even more striking in light of the fact that nine heroin users in the second group reported that they had tried unsuccessfully to wean themselves of the heroin. Eight of the nine could not withdraw from the drug for more than six months. The ninth was able to withdraw for one year but he then returned to heroin by the time he was tested. Of the five heroin users in the first group who were able to abandon the drug for at least a year and a half *three* were mislabeled as controls. Thus, of the ten heroin users who were mislabeled as controls, nine of them had either been taking drugs for a brief period of time or had been "off" drugs for a very lengthy period of time. Conversely, there were sixteen subjects in the heroin-user group who had been both "on" drugs for a lengthy period of time and who even when they tried, could not give up the drug for more than a brief

period of time and fifteen of these were correctly classified as heroin users. From this point on we shall refer to these 16 as heroin *addicts* to differentiate them from the other 14 heroin users⁵.

The fact that 15 of the 16 heroin *addicts* were correctly identified while nine of the 14 "short term" or "successfully withdrawing" heroin users were misidentified, needs interpretation. We believe it to mean that the first group, the heroin *addicts*, are characterized by a greater prevalence of, or potential for womb fantasies before they ever begin taking drugs and this is one of the factors that makes withdrawal so difficult. We reason that the three mislabeled heroin users who were "off" drugs for at least a year and a half were able to give up the drug "habit" for the very reason that the womb fantasies and the impulses that these served were not strong in them in the first place. For this same reason we would further postulate that at least some of the six mislabeled "short term" heroin users would soon withdraw from the drug and remain "off" for a relatively lengthy period of time.

However, it could also be argued, that the prevalence of much more notable womb fantasies among the heroin *addicts* was a *result* of their

⁵ The one mislabeled heroin *addict* in this group of 16 also deserves comment. He was the only one in the entire group of 30 heroin users who was under the influence of heroin at the time he was tested, having taken a "shot" shortly before he came to the office where the Rorschach was administered. One possible explanation for the absence of noteworthy womb fantasy responses in his Rorschach is that the physiological state that heroin induced was experienced as womb-like and thus the need for nurturing womb fantasies may have been temporarily abandoned. A second possibility is that womb fantasies are not abandoned and perhaps even stimulated by the physiological state resulting from heroin usage and are actively discharged in conscious semi-disguised fantasy. Thus, this subject may have released these fantasies before taking the test, thereby greatly minimizing their expression in his Rorschach imagery.

extensive use of drugs, i.e. a function of the physiological effects of the drug. According to this argument these effects would not be present if heroin had only been used for a brief period of time or if heroin had been abandoned for a lengthy period of time. A crucial step that could be taken to decide this issue would be to retest those "short term" heroin users who continue using heroin for a much longer period to determine if prolonged drug use appreciably increases the number of Rorschach responses with intrauterine implications. Until this step is taken, our explanation as to what is cause and what is effect admittedly rests on shaky grounds.

An assumption of this study has been that the particular kind of Rorschach content we have dealt with here has intrauterine implications. However, since it was only for the "water" subcategory of the four defined under Category I, that a significant difference was found, the question of whether this assumption is justified can be raised. The justification for the existence of this relationship receives support from Alexander's statement (1941, p. 62) describing womb fantasies in asthmatics that "the universality of the significance of water (ocean, lake, bathtub, etc.) as a womb symbol belongs to the best established findings of psychoanalysis". We should also like to point out that the direct non-symbolic references to the intrauterine state were given *only* by heroin users. Furthermore, when the "enclosures" subcategory (which seems to us less ambiguous in terms of its referent) was redefined more conservatively, the difference between the two groups became significant. However, in the absence of confirmatory associations to their Rorschach productions by the subjects, we feel that our interpretation of these responses is not a closed issue.

We have been unable to find in the literature mention made by other investigators of intrauterine fantasies in heroin users. The few projective test

studies described earlier did not deal with content themes, particularly at the dynamic level that we attempted here. Most of the non-analytic psychiatric investigations of drug addicts also dealt with surface personality variables and attempts were not made to assess the patient's unconscious fantasy life. It is interesting, however, that Zimmering *et al* (1951) reported that the 12 addicts who they interviewed preferred to sit quietly in a dark room with soft music playing on the radio after they had injected themselves with heroin and that one boy preferred to take his "shot" while lying in a bathtub filled with warm water. In another study by the same authors (Zimmering *et al*, 1952), this time, of 23 heroin addicts, it was reported that all the addicts described their feelings under heroin as "a disappearance of anxiety and a feeling of euphoria with a sense of buoyancy and floating". It seems reasonable to infer from the findings of both these studies that the addicts were trying further to simulate the intrauterine environment.

There is considerably less psychoanalytic literature on drug addiction than on many other psychopathological conditions since most addicts are considered very poor candidates for psychoanalysis. We were unable to find any psychoanalytic publication that specifically mentions the presence of intrauterine fantasies in drug addicts. (Mannheim, 1955) in a case study report of one addict seems to imply this, though she does not deal with this phenomenon in more than a cursory way. In describing her patient, she remarks, "what she really wanted was the deepest longing of the addict, to be the child, suckled, petted and engulfed in the mother . . . Her dreams entailed the oceanic longing for sheltered existence and oral satiation". However, we discussed our findings with Dr. Robert Savitt, one of the very few psychoanalysts who has had even moderately extensive and intensive experience with drug patients. He

indicated that our results having to do with the prevalence of womb fantasies in this kind of patient were consistent with his findings from treating individual addicts.

We should like to make it clear that neither we, nor Savitt, posit the existence of memory traces to account for the presence of womb fantasies. In terms of our present knowledge it would seem much more sensible to see these fantasies as based in ideational constructions that the growing child makes of what intrauterine life is like, as a result of what he factually learns and, even more important, of what he imagines it to be.

What meaning do these intrauterine fantasies have for the heroin user? The results of our research cannot answer this question, but simply point to the existence of such fantasies. However, to put our findings in a theoretical context, two possible meanings that such fantasies could have shall be discussed.

One possibility is that Lewin's formulation (1950, p. 108) about the womb fantasy being a disguised breast fantasy for the claustrophobic, also applies to the heroin addict. In discussing claustrophobia he writes, "The intrauterine fantasy in which the child identifies itself with a nursing, is taken into the abdomen and in that location continues its feeding or comes to rest in a sound sleep, is a nursing fantasy with a shift downward from breast to abdomen".

An alternate idea has been advanced by Savitt in an unpublished paper presented at the 1958 mid-winter meetings of the American Psychoanalytic Association. Based on the analyses and partial analyses of four heroin addicts, Savitt questions if his patients' wishes for an intrauterine existence are primarily a screen for the wish to be in the mother's arms and at the breast. He wonders instead, if it is not certain specific aspects of intrauterine existence that appeals to the heroin addict, aspects that do not characterize the infant's relationship

with the mother at the breast. "Attempts at mastery through oral incorporation are not sufficient, effective, or rapid enough (for the heroin addict) . . . He resorts, therefore, to a more archaic but more rapid form of passive receptivity which bypasses the oral route, namely the intravenous channel, which for purposes of nutritional intake may be considered the later day equivalent of the umbilical cord". In elaborating upon this he states that for the heroin addict, only the intrauterine state as he fantasies it will satisfy "the need for the irresistible immediacy of relief from non-pleasure. The oral route is too slow". In addition, it is only in the fantasied intrauterine state that he can receive nourishment automatically and on demand. This Savitt believes may be of particular importance due to inadequate early mothering received by addicts. Based on his case material he hypothesizes that for heroin addicts the "flow of milk and the caress of mothering was interrupted too soon. The addict never had enough of maternal milk and of mothering because he was weaned abruptly or suffered what amounted to an early psychological abandonment by his mother . . . Because of this insufficient mothering, he needs to revert to a level analogous to that at which mothering (i.e. complete nourishment and security) occurred in utero independent of the mother's psychological state or wishes. This regression, so to speak, is created for a moment, at the instant the addict injects the heroin intravenously".

It should be noted that the idea that intrauterine fantasies occur to a noteworthy degree in heroin addicts was arrived at independently by Savitt and by us, as a result of two different methods of investigation. It was only after we made this discovery, that we compared notes. This strengthens the likelihood that this finding is a valid one. Still, confirmation by other projective technique studies and by other psychoanalytic

investigations will be needed before this finding can be taken as a hard fact.

SUMMARY

This study was undertaken to investigate the frequency of certain kinds of imagery in the Rorschach records of heroin users. This imagery appeared with seeming frequency in a group of 13 heroin users tested earlier. The subjects for the study proper were 30 young adult heroin users and 30 controls. The controls were persons who were non-drug users despite the fact that heroin was readily accessible to them. They were very similar to the heroin users in age, race, education, diagnosis, and in being apprehended for criminal acts. The Rorschachs were administered by one investigator and were scored "blind" by the second investigator for two content categories. Category I included responses involving imagery that was felt to symbolically refer to properties of the intrauterine state, therefore, reflecting the presence of unconscious womb fantasies. Category II included responses that involved other highly regressive imagery but without symbolic reference to the intrauterine state. The "blind" evaluator also made a global judgment as to whether she felt that the particular record was that of a heroin user or a control. She used as her criterion her global impression of the Rorschach primarily based on a flexible evaluation of the intrauterine responses.

A summary of the results follows:

- (1) The heroin users produced a significantly greater number of responses with intrauterine implications than the controls.
- (2) There was no significant difference between the two groups for the number of responses that involved other highly regressive imagery, although there was a tendency in the predicted direction.
- (3) The "blind" evaluator was correct in predicting from which group each subject came in 70% of the cases, a number significantly greater than

would be expected by chance. Moreover, of the 16 heroin users who had used the drug for a lengthy period of time and were not able to withdraw even when they tried, 15 of these were categorized correctly.

These findings were discussed and an attempt was made to place them in a theoretical context.

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An Approach to the Study of the Stimulus Significance of the Rorschach Ink Blots¹

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There is the tendency among clinicians to regard Rorschach cards IV and VII as having specific symbolic significance as father and mother figures and several rather different experimental approaches have yielded data which have tended to support such hypotheses (Meer and Singer, 1950; Rosen, 1951; and Hirschstein and Rabin, 1955). Charen (1957), on the other hand, has argued against such practice on the basis of highly convincing clinical data.

If cards IV and VII do in fact possess such specific symbolic significance they must be considered to have connotative meanings which are similar to the connotative meanings attached to the concept of "father" and "mother". One technique which is claimed to measure connotative meaning is the semantic differential as presented by Osgood and others (Osgood, 1952; Osgood, Suci and Tannenbaum, 1958).

The study reported here was an attempt to evaluate the stimulus value of each Rorschach card by the indirect means of determining the similarity between the connotative meaning of each card and the connotative meaning of a number of concepts, among which were "father" and "mother".

METHOD

Subjects and Procedure

Twenty undergraduate students (16 males and 4 females) ranging in age from 19 to 36 years, who were enrolled in an introductory Psychology course served as subjects. Each subject was provided with 30 sheets of paper, on each of which was a form

of semantic differential consisting of sixteen 7 point scales. At the extremes of each scale were adjectives which were essentially antonyms (see Table I). At the top of each sheet was

TABLE I. Scales Used in the Semantic Differential

Good	Bad	Large	Small
Strong	Weak	Active	Passive
Soft	Hard	Happy	Sad
Friendly	Hostile	Beautiful	Ugly
Warm	Cold	Frightening	Reassuring
Light	Heavy	Young	Old
Bright	Dark	Kind	Cruel
Fast	Slow	Dominant	Submissive

a notation indicating what was to be rated on each particular set of 16 scales. After being given two practice scales, S's were instructed to turn to the first sheet at the top of which was the notation "Card I". Card I of the Rorschach was then projected onto a screen at the front of the classroom and S's were instructed to rate the inkblot on all of the sixteen 7 point scales. When all S's had completed the rating they were told to turn to the next page where they were to rate "Card II" which was then projected onto the screen. Each Rorschach card was rated in this manner.

When all 10 cards had been rated S's were instructed to proceed to the following pages and rate the concept which was printed at the top of each sheet. S's were allowed to work at their own speed from this point on. A general discussion of the purpose of the study followed the completion of all ratings. All 20 of the concepts used were Rorschach responses including most of the responses classified as populars (see Table II).

The similarity of the "meaning" attributed to a given card was com-

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TABLE II. Concepts Rated in This Study

Animal Hide	Fire
Ape	Halloween Mask
Bat	Iceberg
Blood	Man
Butterfly	Monster
Clouds	Mother
Dancing	People
Explosion	Penis
Father	Witch
Fighting	Woman

pared to the "meaning" attributed to each concept by means of the generalized distance formula $D = \sqrt{\sum d^2}$, devised by Osgood (1952). In this case " d is the difference in allocation of the two concepts on a single scale" (Osgood and Luria, 1954). Using this method a small value of D is associated with greater similarity and a large D value with less similarity of ratings or connotative meaning.

RESULTS

The five concepts with the lowest median D values (greatest similarity) and the 5 concepts with the greatest D values (lowest similarity) in relation to each Rorschach card are presented in Table III. Specifically, these data do not support the hypotheses that cards IV and VII have highly significant value as father and mother symbols respectively.

The concepts used in this study whose connotative meanings were most similar to the connotative meaning attributed to Card IV are generally negative, "frightening" and unpleasant. This raises the possibility that contrary to the usual clinical practice of inferring attitudes toward the father or other authority figures from a subject's response to card IV, the subject's response to the appearance of the "father" in this card may indicate strong negative attitudes toward the father or father surrogate.

The data obtained in this study are rather more validating with regard to the hypothesized significance of card VII. In this case those concepts whose connotative meanings are most

TABLE III. Five Concepts with Connotative Meaning Most and Least Similar to Connotative Meaning Assigned to Rorschach Card. (Number 1 is most and Number 20 is least similar)

	I	II	III	IV	V	VI	VII	VIII	IX	X
1	Ape	People	Penis	Monster	Bat	Witch	People	People	People	People
2	Bat	Penis	People	Ape	People	Ape	Woman	Bat	Mask	Mask
3	Witch	Mask	Man	Fighting	Woman	Hide	Mask	Man	Man	Man
4	Mask	Hide	Blood	Witch	Penis	Iceberg	Hide	Penis	Penis	Bat
5	Fighting	Man	Hide	Iceberg	Mask	Mask	Dancing	Mask	Blood	Clouds
16	Father	Fighting	Explosion	Father	Dancing	Father	Ape	Clouds	Bat	Mother
17	Mother	Explosion	Butterfly	Mother	Clouds	Mother	Explosion	Dancing	Fighting	Woman
18	Woman	Witch	Witch	Dancing	Explosion	Dancing	Witch	Iceberg	Witch	Dancing
19	Dancing	Iceberg	Iceberg	Woman	Monster	Woman	Iceberg	Woman	Iceberg	Iceberg
20	Butterfly	Monster	Monster	Butterfly	Iceberg	Butterfly	Monster	Monster	Monster	Monster

similar to the meaning attributed to card VII are in fact predominantly human and female or feminine. These findings are entirely consistent with the tendency to infer attitudes toward women and females in general from the responses obtained on this card.

In general, these data derive added validity from the clustering of the populars among those concepts with meaning most similar to the connotative meaning attributed to the various cards. Thus, those "P" responses which are W, W or D without exception appear among the "most similar" concepts. Such responses are: Card I—Bat; Card II—People; Card III—People; Card V—Bat; Card VI—Animal Hide; and Card VII—Woman. It appears, therefore, that the semantic differential and the Rorschach may *in part* be tapping a similar level of attitudes and perceptual tendencies.

Other aspects of the data in this study require one to say the semantic differential and Rorschach tap similar levels of personality attributes only "in part". The most striking example of the differences involved is seen in the list of concepts rated in a similar fashion to the ratings given cards III and VI. The concept "Penis" does not appear to have "meaning" highly similar to the connotations of Card VI while it's "meaning" is most like the "meaning" assigned to Card III.

This discrepancy may be attributable to any of several factors among which are the probable difference between the effects on perception of group and individual administration, and the possible influence of conscious control factors in the individual face to face situation.

DISCUSSION

Due to the size of the sample, the

nature of the subjects and the manner of presenting the Rorschach cards several important questions can of course be raised. Whether or not the results presented here can be replicated with a larger, more representative sample or with neurotic or psychotic subjects is, however, an empirical question. Individual presentation of the cards themselves instead of group viewing on a screen may also result in different findings to some extent.

There remain, however, at least three important points. First, the method employed seems to offer a valuable approach to the analysis of the stimulus value of the Rorschach inkblots. Second, within the limits of sample size and method of administration, the results support in part the assumption made regarding the symbolic significance of Card VII and third, they corroborate the classification of certain responses as "Popular".

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Effects of a Variation in Instructions on Responses to TAT Cards¹

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It is assumed that responding in the third person to the Thematic Apperception Test (TAT) produces fewer avoidance responses in *S* than if he were responding with similar content directly about himself. In support of this notion, Tomkins (1948) observed informally that *Ss* instructed to respond in the first person, i.e., as if *S* were the person in the picture, either refused to comply with instructions at all, or when they did comply, produced impoverished stories.

In the present study, an attempt was made to put Tomkins' observation to experimental test. It was assumed that, as compared with third person instructions the increased avoidance associated with first person instructions would be reflected in longer initial reaction times, longer total narration times, an increased number of pauses exceeding a ten second limit, and a reduction in total number of words.

METHOD

Subjects

Two separate samples of male *Ss* were studied. One group was composed of 30 summer session students from an introductory course in psychology at the State University of Iowa. The mean age of this group was 24.3 years (SD 2.5). The mean educational level was 13.8 years (SD 1.1).

The other group was composed of

30 psychiatric patients hospitalized at the Veteran's Administration Hospital in Iowa City. No patients who were beyond 55 years of age, or who were suspected of neurological disorders were used. The mean age of this group was 33.7 years (SD 7.7). The mean educational level was 10.2 years (SD 2.9).

Because of the significant differences in age and educational level between these two groups, no attempt was made to compare their results in a single statistical design.

Procedure:

Six TAT cards were used: Cards 6GF, 2, 6BM, 7BM, 4, and 13 MF. Card 6GF, served as a sample card and was always presented first, followed by the remaining five cards presented in the above sequence. Statistical analyses were confined to the data for these five cards.

Each *S* was administered all cards twice, once under each of two instructional conditions. The standard instructions required *S* to respond in the third person, while the experimental instructions required *S* to respond in the first person, i.e., to tell the story as though it were happening to *S* himself. Half the *Ss* were initially administered the six card series under the standard instructions and, after an interpolated period of 15 minutes, were readministered the six cards under the experimental instructions. The other *Ss* were tested in the reverse order.

During the interpolated period, certain biographical information (age, education) was secured and the Information subtest of the Wechsler Adult Intelligence Scale was administered.

For the College sample *E* recorded *Ss* stories by hand. For the patient

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sample, a microphone, in clear view of S, was used and the stories were tape recorded.

RESULTS

Statistical Analysis of the Data

Separate Lindquist Type II analyses of variance (Lindquist, 1953) were computed for each of the four criterion measures for each group. Each criterion score for an individual S was computed by summing scores of the entire series of five TAT cards taken as a unit.

Student Sample:

In Table I, the main effect of the instructions was significant for all criterion measures except initial reaction time.

TABLE I—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Third Person Instructions (Students)

Criterion	First Person	Third Person	F
Initial Reaction Time in Seconds	121.46	87.43	3.92
Total Time in Seconds	937.93	766.10	9.90**
Total Number of Words	623.23	528.10	11.29**
Total Number of Pauses	2.66	1.76	4.84*

* $p < .05$

** $p < .01$

In Table II, the main effect of order was significant for all criterion measures except total number of pauses.

As regards this latter measure, a significant instructions-by-order interaction resulted.

Patient Sample:

The results of the analyses of variance for the psychiatric sample are presented in Tables III and IV.

In Table III, the main effect of instructions was significant for only one criterion measures initial reaction time.

TABLE II—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Second Administrations (order) of the 5 TAT Cards (Students)

Criterion	First Administration	Second Administration	F
Initial Reaction Time in Seconds	125.77	84.14	5.58*
Total Time in Seconds	774.97	929.07	7.76**
Total Number of Words	529.76	630.57	10.58**
Total number of Pauses	2.03	2.40	.80

* $p < .05$

** $p < .01$

TABLE III—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Third Person Instructions (Patients)

Criterion	First Person	Third Person	F
Initial Reaction Time in Seconds	99.43	68.50	13.35**
Total Time in Seconds	391.43	397.36	.18
Total Number of Words	271.60	281.16	.32
Total Number of Pauses	3.90	3.43	2.14

* $p < .05$

** $p < .01$

TABLE IV—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Second Administrations of the 5 TAT Cards (Patients)

Criterion	First Administration	Second Administration	F
Initial Reaction Time in Seconds	92.03	74.20	5.01*
Total Time in Seconds	425.40	343.40	6.25*
Total Number of Words	276.27	289.27	.0002
Total Number of Pauses	4.80	2.53	22.31*

* $p < .05$

** $p < .01$

Table IV reveals that the main effect of order was significant for all

criterion measures except total number of words.

There were no significant instructions-by-order interactions.

DISCUSSION

Treatment Effects

Significantly longer total times to tell TAT stories, and a significantly greater number of pauses occurred when student Ss were required to respond to the TAT cards under first person instructions. Although not significant the mean initial reaction time for the student sample was nearly half again as long under first person as compared with third person instructions.

Contrary to expectation, the total number of words comprising the student Ss stories was significantly greater when the stories were told in the first person. It may be argued that first person instructions result in a heightened drive state as well as in the interfering tendencies suggested by the results for the other criterion measures. It is conceivable that this heightened drive state could result in greater productivity. It is also possible, and worthy of further study, that verbal output under first person instructions might be largely composed of relatively superficial verbalizations offered by the student Ss in their attempts to obey instructions and yet preclude personal content.

Significant treatment effects with respect to only one of the criterion variables, initial reaction time, was found for the patient group. The absence of any other significant treatment effects might be a function of the impoverished level of the stories produced by the patients under both instructional conditions making it difficult to detect differences in the criterion measures.

A second hypothesis is that the patient group was inhibited with respect to the total task situation. This hypothesis is compatible with E's observation of a much greater degree of resis-

tance and suspiciousness encountered with patient Ss as compared with the student Ss. Perhaps contributing to their resistiveness was the presence and use of a tape recorder and microphone, which were not employed with the student sample.

Order Effects:

From first to second administration of the TAT cards, there resulted a significant decrease in reaction time for both the student and patient samples. This result could be a function of the effects of practice derived from telling a story the first time.

Increases in total time spent on the stories and total number of words comprising the stories from first to second administration for the student Ss, may have also resulted from practice with the test stimuli. A second possibility is that the student Ss felt they were expected to do better when they were requested to tell stories a second time, and hence productivity became more voluminous.

No change in total number of words from first to second administration of TAT cards was found for the patient sample, but significant decrements did occur in total time and total number of pauses. It is plausible that the decreased total time to tell stories of the same length resulted from a desire on the part of the patient Ss to terminate the test situation as quickly as possible. This would be compatible with the inference of greater inhibition to the total task situation on the part of the patient Ss.

The present experiment might be repeated either with the addition of special situational conditions designed to produce greater relaxation and more motivation to perform well or with prior selection of relatively cooperative patients. Another approach might be to use drugs, such as sodium amytal (Masserman, 1943), in an effort to reduce inhibition. It would be predicted that under such conditions, the criterion scores for the patients

would more closely approximate those of the student Ss.

SUMMARY

The purpose of this study was to investigate the effects of a variation in instructions on S's responses to TAT cards. Two samples of Ss were used: a group of 30 college students, and a group of 30 hospitalized psychiatric patients.

Each S was administered a series of five TAT cards twice; once under standard third person instructions and once under first person instructions. Four criterion variables were investigated: initial reaction time, total narration time, verbal productivity, and total number of pauses exceeding a 10 second limit.

For the student sample, the main effect of instructions was significant for all criterion measures except initial reaction time. In the patient sample, only one significant main effect was found; initial reaction time was longer under first person instructions.

As regards the order of administration of the TAT cards, there resulted

a significant decrement in initial reaction time, but significant increases in total time and total number of words from first to second administration for the student Ss. For the patient sample, the effect of order was to decrease initial reaction time, total time, and total number of pauses. Possible reasons for the increase in verbal productivity for the student sample under first person instructions as well as the absence of significant instructions effects for all criterion measures except initial reaction time for the patient sample were discussed, and specific research suggestions were offered.

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Rorschach Card Rejection As A Correlate of Intelligence In Children

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In a recent study Tamkin (1959) tested the hypothesis that intellectual functioning is a determinant of Rorschach card rejection. Using a group of adult hospitalized neuro-psychiatric patients, he found that those patients rejecting one or more cards scored significantly lower on the Wechsler-Bellevue Intelligence Scale than those who did not reject any cards. Moreover, he demonstrated a trend toward an inverse relationship between intelligence and number of Rorschach cards rejected. The present study has as its purpose the testing of the generality of these findings by extending the method employed to groups of emotionally disturbed children.

PROCEDURE

From the files of the Psychology Departments of three different institutions in the Hartford, Connecticut, area, offering services to emotionally disturbed children, 268 cases were randomly selected. The institutions participating were the Children's Clinic at the Institute of Living, the Hartley-Salmon Child Guidance Clinic, and Children's Services of Connecticut. The only criteria for inclusion in this study were that the child's psychological folder contained a formal evaluation of the child's intellectual functioning as measured by one of the standardized tests of intelligence, that a completely scored Rorschach protocol was available, and that the child fell within the age range of 4 years to 17 years, 11 months at the time of testing. Rejection was defined as failure to offer a scorable response during the initial adminis-

tration of the inkblots. Although in a few instances the I.Q. was based on the Stanford-Binet Test or on one of the other Wechsler tests, in the vast majority (72%) of cases the Wechsler Intelligence Scale for Children had been used. The total sample included 179 males and 89 females. Their I.Q.s ranged from 53 to 137, the mean being 98.1.

RESULTS

When children of all ages are combined, it is found that 70 or 26.1% of the total sample rejects one or more Rorschach cards. Table I presents the means and standard deviations in I.Q. for Ss rejecting at least one card and for those rejecting none of the cards. The comparison shows a slight trend for the group in which rejections were elicited to score lower in intelligence than for the group in which no rejections occurred, but the *t* test of 1.68 indicates that the difference is not significant even at the .05 level. Since the groups differed significantly in variances, with the "no-reject" group having a greater vari-

TABLE I—A Comparison In Intelligence Between Children Rejecting One or More Rorschach Cards and Children Rejecting None.

Groups	Intelligence Quotients		<i>t</i>
	Mean	S.D.	
Reject (N = 70).....	96.9	8.78	1.68*
No-Rejects (N = 198).....	99.3	13.61	

* Cochran and Cox modified *t* at the .05 level is 1.97; at the .01 level is 2.62.

test the validity and generality of Tamkin's (1959) finding that Rorschach card rejection is a function of intelligence in adult patients. The authors of this investigation extended the methods previously employed to a group of 268 emotionally disturbed children, aged 4 years to 18 years, on whom complete Rorschach records and intellectual evaluations were available. For the group as a whole the data indicated that those Ss who rejected at least one Rorschach card did not differ significantly in intelligence from those Ss who did not reject any cards. When the overall sample was separated into five age-level groups, in only one instance is there a significant I.Q. difference between rejectors and non-rejectors. Moreover, there was no evidence of an inverse relationship between the number of cards rejected and the child's level of intellectual functioning. Therefore, the results failed to confirm the hypothesis that Rorschach card rejection is a correlate of intelligence in emotionally disturbed children. The discussion revolved around the differences in samples and in statistical procedures which could account for some of the differences in results obtained by Tamkin (1959). In addition, normative data on card rejection were presented and related to the findings of other investigators.

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When the number of Ss in the different groups attains a more respectable size, not even a trend is in evidence. When these findings on intellectual factors as not being significantly related to Rorschach card rejection are combined with the findings of several other studies (Mensch and Matarazzo, 1954; Sisson, Taubee and Gaston, 1956) showing that card rejection has little or no diagnostic significance in terms of nosological classifications, and with a study (Tamkin, 1958) indicating that rejection is unrelated to various personality variables as measured by the MMPI, one is left with the uncomfortable but irrefutable conclusion that we do not currently know the specific variables which account for Rorschach card rejections.

Despite the fact that the meaning of rejections on the Rorschach remains largely a matter of conjecture, there is considerable empirical evidence available on the frequency of rejection and on the specific cards which are most susceptible to rejection. In general agreement with most previous studies (Mensch and Matarazzo, 1954; Sisson et al., 1956; Ames, Learned, Métraux, and Walker, 1952), but in disagreement with the 44% of rejection computed for Tamkin's (1959) Ss, is the 26% rejection rate obtained in our sample of children; also, in general agreement with former studies (Tamkin, 1958; Mensch and Matarazzo, 1954; Sisson et al., 1956) is the finding that cards IX and VI are among the most frequently rejected ones. Departing from the findings of the other investigators, however, is the high incidence of Card II rejection among our Ss, a finding which may distinguish children from adults. The relative agreement among studies reporting normative data appears to represent a promising foundation on which more penetrating insights can eventually be formulated.

SUMMARY

The present study was designed to

TABLE III—Frequencies and Percentages of 268 Emotionally Disturbed Children Rejecting Individual Rorschach Cards and Rank Order of Rate of Rejection

Rorschach Card	No. of Rejections	Percent Rejections	Rank
I	9	3.3	8
II	15	5.6	3
III	6	2.2	9
IV	12	4.5	6
V	2	.7	10
VI	25	9.3	2
VII	14	5.2	4.5
VIII	11	4.1	7
IX	34	12.7	1
X	14	5.2	4.5

and percentages of emotionally disturbed children rejecting each individual Rorschach card.

DISCUSSION

The results of the present study indicate quite clearly that the hypothesis stating that Rorschach card rejection is determined by differences in intellectual functioning is an untenable one, at least when generalized to groups of emotionally disturbed children. The apparent inconsistency between the results obtained in this study and those of Tamkin (1959), with respect to the role played by intellectual factors in card rejection, can be easily reconciled not solely on the basis of differences in samples used, but also by reviewing Tamkin's statistical procedures. The barely significant difference which he obtained between rejectors and non-rejectors in intelligence is a function of his having used a one-tailed test, which in this instance is of questionable justification (See Kimmel, 1957). Furthermore, the data which were offered in support of the belief that groups of Ss rejecting increasing numbers of Rorschach cards also have a progressively decreasing intellectual capacity was not subjected to any tests of significance because of the small number of individuals in these groups. In the present study, however, when such tests of significance are applied, and

ance than the "reject" group, the Cochran and Cox (1950) modification of the t test was used.

When the overall group is separated into five different age groups as follows: (1) 4 years to 7 years, 11 months; (2) 8 years to 9 years, 11 months; (3) 10 years to 11 years, 11 months; (4) 12 years to 13 years, 11 months; and (5) 14 years to 17 years, 11 months, and chi square tests are performed within each sub-group to ascertain whether there is any significant association between falling below the group's mean in intelligence and the tendency to reject Rorschach cards, the results are essentially negative. Of the five comparisons made, only one, at age level 12 years to 13 years, 11 months, yields a significant chi square ($\chi^2=4.69$, $P<.05$).

In view of the fact that Tamkin (1959) also found that the mean I.Q.s of groups of adult patients tended to decrease with increasing amounts of rejection, a similar analysis was made for emotionally disturbed children. Table II discloses that there is no consistent pattern of association between the variable of number of cards rejected and the variable of intelligence. It should be noted further that none of the mean differences is statistically significant.

TABLE II—Intelligence of Children Rejecting Varying Number of Rorschach Cards

Number of Cards Rejected	Number of Ss	Mean I.Q.	S.D.
0	198	99.3	13.61
1	35	99.5	15.17
2	20	95.1	16.05
3 or more	15	100.5	13.58

A final comparison made relates to the differential rejection rates associated with the various cards. Cards IX, VI, and II are found to be the most frequently rejected inkblots whereas cards V, III, and I are least often rejected. Table III presents information concerning the frequencies

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A Comparison of Two Methods of Analyzing Rorschach Data in Assessing Therapeutic Change¹

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Investigations of the effectiveness of various forms of psychotherapy have frequently employed pre- to posttherapy differences on the Rorschach test as a principal criterion of personality change. Typically, the experimenter has set up a list of specific signs or indices (e.g., M, FC, F+%, M:sum C) and has based his assessment of personality modification upon quantitative changes in these signs. While such an approach has the merits of objectivity, quantifiability and ease of statistical handling, it may be contended that the use of isolated Rorschach measures as indicators of change tends to focus on discrete elements taken out of the context of an integrated performance, and thus presents a fragmented or distorted picture of modification in personality structure. What is necessary, according to the alternate view, is a global approach to the Rorschach protocol, in which the various response elements are considered within the framework of the unique pattern of the total Rorschach performance. Hamlin, Berger, & Cummings (1952, p. 109), for example, have suggested that, "That which influences the clinician most in making a judgement may not be an isolated score or sign. He may be influenced most by an insight that emerges from the interplay of many specific factors, or by a total picture of a personality that develops out of the total Rorschach."

Besides permitting the analyst to assign a proper perspective to the various Rorschach elements which lend

themselves to quantification, an approach in which the total Rorschach protocol is considered would appear to have the further merits of enabling one to take into account such unquantifiable aspects of the Rorschach performance as the individual style and nuances which characterize specific responses, as well as the sequence in which particular responses are produced.

The present paper reports the results of an attempt to test the hypothesis that a global analysis of Rorschach protocols is more valid than a sign approach in evaluating the effectiveness of a therapeutic program.

A frequently cited study employing the sign approach is that of Muench (1947) who, among other criteria, made use of a list of 22 Rorschach signs of adjustment consisting, for the most part, of indices defined by Hertz (1946). Muench applied these signs to the Rorschach records of twelve patients obtained before and after exposure to non-directive therapy and found that these subjects, as a group, showed improvement on a statistically significant number of the signs. In an attempt to see if Muench's signs would again indicate significant change with therapy when applied to a new and larger sample, Hamlin et al. (1952) assessed the degree of change in 20 of these signs in the pre- and postpsychotherapy Rorschach records of 20 patients. Additionally, the experimenters tested for a change in Buhler's Basic Rorschach Score (1948). The results indicated that, as a total group, the patients did not manifest statistically significant pre- to post-

¹Expanded from paper read at E. P. A. Convention, Atlantic City, 1956.

therapy differences on Muench's signs of adjustment, although there were slight differences in the expected direction. A significant mean gain was, however, shown in the Basic Rorschach Score.

Additional studies of the effects of psychotherapy in which pre- to post-therapy differences in specific Rorschach signs (not necessarily the ones used by Muench) constituted the principal criterion of change are those of Barry, Blyth, & Albrecht (1952), Cadman, Misbach, & Brown (1954), Carr (1949), Haimowitz & Haimowitz (1952), Lord (1950), and Piotrowski & Schreiber (1952). Changes tending to favor the therapy patients were observed by Cadman et al., Haimowitz & Haimowitz, Lord, and Piotrowski & Schreiber, although statistical tests of significance are reported only by Cadman and by Haimowitz & Haimowitz, while Lord did not employ a control group. On the other hand, Barry et al. correlated changes in 70 Rorschach indices with independent judgements of change in adjustment level and found statistically significant relationships for only three signs. Similarly, Carr, using a list of signs very much like those of Muench, failed to find significant changes following therapy.

It appears, thus, that there is a considerable lack of agreement in the experimental literature about the usefulness of a Rorschach sign approach in evaluating therapeutic change.

Studies in this area in which a more global treatment of Rorschach results was utilized have also not been unanimous in their results. Carr (1949), in addition to his use of the sign approach mentioned above, also asked an experienced Rorschach worker to evaluate therapeutic change by means of a thorough study of total pre- and posttherapy protocols. No significant improvement following therapy was found, in contrast with the fact that a much greater degree of improvement was indicated by independent counselor evaluations. Kessler & Wolfen-

stein (1953), while apparently applying no statistical tests, reported that for 66 per cent of their cases there was a close agreement between Rorschach assessment of therapeutic change and change on an independent rating scale of behavioral items. Krout, Krout, & Dulin (1952) and Haimowitz & Haimowitz (1952) used a form of global Rorschach approach in which test responses were evaluated in terms of a series of clinically meaningful concepts or categories such as anxiety and reality orientation. Both groups of investigators reported results which, in general, favored the patients receiving psychotherapy.

METHOD

In the present study, the relative effectiveness of a global and a sign approach to the Rorschach test as a measure of therapeutic change was assessed by comparison with an independent criterion of response to therapy. It was hypothesized that the global treatment would prove to be the more valid. This study was developed in the context of a research program, carried out at the Boston State Hospital, in which the authors were concerned with the assessment of the effect of an intensive program of ancillary therapeutic procedures upon the adjustment of chronic mental hospital patients (Notman & Williams).

Subjects. Forty-eight male and 48 female chronic mental hospital patients constituted the subjects of the present experiment. The mean age of these patients was 41 years, and they had been hospitalized for an average of eight years at the time the study began. All of the females and most of the males had been diagnosed as functionally psychotic. For approximately half of the male and half of the female patients, the therapeutic program consisted of an intensive schedule of ancillary therapies, such as occupational, recreational and educational therapy, vocational guidance, and psychiatric social service casework. The remaining fifty per cent of male and female

patients, though not recipients of this formal intensive program, were, nevertheless, exposed to the varieties and amounts of ancillary and/or somatic therapies commonly received by patients in the usual course of events on a chronic mental hospital service. Additionally, 15 of the females in the intensive ancillary therapy program and 10 in the usual hospital chronic service program received group psychotherapy. For the males, the therapeutic program lasted 21 months, for the females, 14 months. These periods define the pre- and posttreatment intervals of the present study.

These 96 patients were selected from a larger number so as to exclude those whose Rorschach records contained less than nine scorable responses, since it was felt that so few responses did not permit valid statistical manipulation.

Procedure. To test the hypothesis of the present study, pre- to post-treatment changes in 11 quantitative Rorschach indices, on the one hand, and a global rating of change based on the total Rorschach protocol, on the other, were compared with an independent criterion of therapeutic progress or change.

Hospital ward social adjustment, as measured by rating scales obtained at the times that the Rorschachs were administered, constituted the independent criterion of therapeutic progress or change. These ward behavior rating scales were completed by nurses and ward psychiatric aides familiar with the patients. Although different rating scales were used for the male and female patients, they were designed to reflect a similar order of behavior. For the male patients, the ward observation items of the Multidimensional Scale for Rating Psychiatric Patients, developed by Lorr, Jenkins, & Holsopple (1953) were used. For the female patients, a ward behavior rating scale developed by the present authors was used. The items in both scales are concerned with such aspects of patients' be-

havior as assaultiveness, withdrawal, participation in ward social activities, and personal tidiness, and seem to represent a reasonable sampling of social behavior on the ward.

The Rorschach tests were administered to all 96 patients at the beginning and at the conclusion of the therapeutic program already described. In order to minimize variations in performance ascribable to differences in the examiner-testee relationship, the same psychologist administered the pre- and posttests to any one patient in almost all cases. All 192 Rorschach protocols were scored by one person.

The 11 quantitative signs or indices were selected either because of their traditional interpretive significance or because of recent experimental evidence on the basis of which a relationship to therapeutic change might reasonably be expected. The quantitative indices employed were: M+ (human movement with good form level), FC, W- (whole response of poor form level), popular responses, sex responses, F+ % (ratio of F with good form level to total F, Klopfer's), (H + Hd) %, and (A + Ad + Aobj) %.

In addition to these, were three indices, derived from criteria described by Friedman and by Phillips, and their associates, which appear to be correlated with sequences found in the normal course of ontogenetic development (Friedman, 1952; Hemmendinger, 1951; Lane, 1955; Phillips & Smith, 1953). The first of these measures, the index of integration, indicates the ratio to the sum of all W and D responses, of those W and D percepts in which an attempt is made first to analyze the blot into a number of parts and then to synthesize these components into a well-integrated good form-level response. The second measure, the index of primitive thought, indicates the ratio to the sum of all W and D responses, of three percepts which are almost universally considered to be pathognomonic of

severe cognitive disfunction: confabulations, contaminations and fabulized combinations.

The third of these developmental indices, the Fx score, was first proposed by Waldman (1950), and reflects the balance of form dominance in all responses involving color and shading. The Fx score is calculated in an analogous manner to the way color responses are generally scored: if the form element is dominant in a response involving color or shading, it is assigned a weight of 0.5; if F is subordinate, a weight of 1.0 is assigned; responses determined by color and shading with F absent are given a weight of 1.5. The sum of the weighted scores in which F is subordinate or absent is subtracted from the sum of the weighted scores in which F is dominant over color or shading. Therefore, the higher the Fx score, the greater the emphasis upon form.

These, then, were the 11 indices, each of which was compared with the independent criterion of therapeutic change.

The global Rorschach judgements of change in adjustment level were made by a highly qualified clinical psychologist who has had a considerable amount of clinical and research experience with the Rorschach.² Verbatim pre- and posttreatment Rorschach protocols for each patient, with information identifying the temporal sequence masked, were presented to this judge. On the basis of all the information potentially available in the protocols, and considering the various response elements in whatever combination and with whatever weighting he thought proper, he ranked the two records for each patient in terms of which one appeared to represent a greater degree of social adjustment. In addition, he also indicated, on a four-point scale, the level of confi-

dence with which each judgement was made. Considering those pairs of records for which the judge felt unable to make a confident judgement of change as reflecting no essential pre- to posttreatment differences, it was then possible to classify each patient's response to the treatment program as improved, impaired, or unchanged, as indicated by the global Rorschach judgement of social adjustment. Since all global ratings were made by a single individual, it was, of course, not possible to assess the reliability of these judgements.

Treatment of the data. Since many Rorschach indices yield sharply skewed distributions for most populations (Cronbach, 1949), only nonparametric, or distribution-free, techniques were utilized in the evaluation of the data. Pre- to posttreatment differences in six of the 11 Rorschach indices [F+ %, (H + Hd) %, (A + Ad + Aobj) %, Fx score, index of integration and index of primitive thought] were correlated with pre- to posttreatment differences on the independent criterion, ward behavior ratings, by means of Spearman's rank-difference coefficient. The distributions of pre- to posttreatment differences in the remaining Rorschach indices were found to contain a large number of tied scores and, therefore, instead of using a standard correlational technique, the data were treated in the following manner: for each of these Rorschach indices, patients were divided into three groups, according to whether they displayed an increase, a decrease, or no change on that index. The Kruskal-Wallis ranked one-way analysis of variance test (Mosteller & Bush, 1954) was then applied to pre- to posttherapy differences in the ward behavior criterion scores attained by the three distributions of patients. This procedure was followed for the M+, FC, W- and Popular indices. The question assessed by such a procedure was whether there are significant differences among the means of groups of

² For these global Rorschach judgements, the authors are very grateful to Dr. J. Warren Thiesen, Chief Psychologist, Boston Veterans Administration Mental Hygiene Clinic.

ward behavior scores, when these groups have been established on the basis of positive or negative change on specific Rorschach measures.

A similar procedure was employed in determining the degree of relationship between global Rorschach judgements of change and the independent criterion. The Kruskal-Wallis test was applied to ward behavior scores distributed among three groups in terms of the category in which each patient was placed along the improved-unchanged-impaired continuum by the global Rorschach judgements.

Since different ward behavior rating scales served as the independent criterion for the male and the female patients, the relationship between each Rorschach measure and the criterion was determined independently for the male and the female groups of patients. The resulting probability values were then combined (Jones & Fiske, 1953).

RESULTS

The comparison of global Rorschach judgements of change in social adjustment with the ward behavior ratings indicated that these two measures were related at a statistically significant level (Table I). The combined probability for the

TABLE I—Global Rorschach Judgements vs. Criterion

	Kruskal-Wallis statistic	P	Combined P
Males	5.30	.07	
Females	8.30	.02	.01

male and female groups' results was equal to .01.

On the other hand, with the exception of (A + Ad + Aobj) %, changes in no one of the 11 quantitative indices proved to be significantly related to changes in the criterion (Table II). No statistical test was applied to changes in the number of sex responses since 81 of the 96 patients failed to produce sexual content in their pre- and posttreatment Rorschach records. An inspection of the data indicated that the 15 patients producing sexual responses were distributed along the entire range of the independent criterion. It was felt, therefore, that this measure was not sufficiently sensitive to be considered an effective index of change in therapy.

The single Rorschach index which was significantly related to the ward behavior criterion was (A + Ad + Aobj) %. For both groups of patients, the correlation was positive, though somewhat low, with a combined prob-

TABLE II—Quantitative Rorschach Indices vs. Criterion
Quantitative Index

		F+ %	Fx	Index of integration	Index of prim. thought	(H + Hd) %	(A + Ad + Aobj) %	M+	FC	W—	Popular	Sex
Females	Rho or H ^a	.13	.00	-.08	-.18	-.01	.28	.14	2.73	.37	3.46	
	P	.37	1.00	.57	.21	.96	.05	.95	.30	.80	.20	
	Rho or H ^a	.20	.14	.09	.05	-.04	.26	.66	.33	.53	.85	
	P	.17	.33	.52	.75	.79	.075	.70	.80	.80	.70	
	Combined P	.20	.70	.70	.50	.98	.025	.95	.50	.90	.50	
												No test

^aRho, the rank-difference correlation coefficient, was utilized in relating the following indices to the criterion: F+ %, Fx, Index of integration, Index of primitive thought, (H + Hd) %, and (A + Ad + Aobj) %. H, the Kruskal-Wallis statistic, was utilized with M+, FC, W— and Popular.

ability equal to .025. It may be argued that this is not a genuine relationship of significance since it is likely that, in examining a large number of comparisons, a few may be discovered whose statistical significance is due solely to chance fluctuations. The impact of this argument is mitigated, however, by the fact that correlations of borderline significance between $(A + Ad + Aobj) \%$ and the criterion were found in independent analyses of both the male and female patients' responses (see Table II). This is, then, a relationship which is supported by more than a single occurrence; it is indicated in data from two independent groups of subjects, and cannot, therefore, be lightly dismissed.

DISCUSSION

The results of the present experiment indicated that judgements of change in general social adjustment based on an examination of the total Rorschach protocol were significantly related to an independent measure of change on this variable. On the other hand, all but one of the 11 quantitative Rorschach indices failed to show such a relationship. We are faced with evidence that changes in such time-honored and respected indices as $F + \%$, $M +$ and FC fail to relate significantly to a measure of therapeutic change, when considered individually.

It is likely that the reason for this failure lies precisely in the fact that these indices were treated discretely. The behavioral correlates of each of these indices have been fairly extensively explored. It is not difficult for the experienced clinician to describe the circumscribed area of the personality to which any one of these measures probably relates. However, when the given task is that of evaluating change in so broad an area as social adjustment, which is the resultant of so many interrelated elements, it is usually insufficient to regard only one segment of the personality in isolation. dynamic and unique balance of many

Rather, it is necessary to consider the factors, in the light of which the role of any one aspect may then be properly evaluated. Piotrowski (1943) puts the matter as follows:

Every person with many *CF's* is emotionally self-centered and labile, but the intensity and frequency of this feeling reaction, the manner in which it is outwardly manifested, and particularly the type of motor reaction it may initiate, cannot be derived from *CF's* alone, but from the *CF's* and the place the *CF's* occupy in the whole record.

In addition, it is likely that the effectiveness of a quantitative sign approach to the Rorschach is limited by distortions introduced merely by the application of arithmetic processes in expressing the performance of a group of subjects on any single index. A change from 3M to 4M is probably not qualitatively equivalent to a change from 7M to 8M; and, in all likelihood, a W:M ratio of 8:4 is to be regarded from a vastly different point of view than a 2:1 ratio. These are distinctions which the clinician can and does make in considering Rorschach protocols in a global manner; they may, however, easily be obscured if the data are treated by considering the number of signs of adjustment on which a group of patients was able to show a quantitative increase. A discussion of this problem, as well as of others related to the quantitative use of the Rorschach, may be found in Mosak (1952). Cronbach's well-known review (1949) of pitfalls in the application of statistical techniques to Rorschach scores is, of course, relevant here also.

Some investigators (e.g., Hamlin et al., 1952) have suggested that it might be possible to produce a more effective list of Rorschach signs if efforts were devoted in the direction of developing more highly refined or more qualitatively demanding indices. At least one study, however, indicates that such a suggestion should not be regarded with excessive optimism. Using 42 patients in client-centered

therapy, Peterson (1954) correlated three different investigators' lists of Rorschach signs of adjustment, presumed to reflect change in therapy, with an independent objective criterion of therapeutic success. His expectation was that the more vigorously defined signs, those involving a greater degree of qualitative specification (e.g., using only M and W based on responses of better than average quality, rather than counting all M and W), would correlate more highly with the criterion. The results of the experiment failed to support the hypothesis.

The finding that the only one of the 11 Rorschach indices to relate significantly to the independent criterion was $(A + Ad + Aobj) \%$ was at first rather surprising. It has already been suggested that this is probably not a spurious result. Some understanding of this finding may be gained from a further consideration of the criterion of therapeutic change employed in the present experiment. Because the subjects were chronic hospitalized psychotics, it was thought that pre- to posttreatment changes in a measure of ward social adjustment would constitute a reasonably valid criterion of therapeutic movement. It may be, however, that an increase in stereotypy of thought and behavior such as is generally considered to be reflected in a rise in animal content (Klopfer & Kelley, 1946; Phillips & Smith, 1953) is so essential a component of adjustment to the daily routine of a mental hospital chronic ward, particularly as this is evaluated by psychiatric aides, that it is sufficient to account for a statistically significant relationship between these two factors.

That stereotypy of behavior is not the only, nor perhaps even the most important, factor affecting ward adjustment is suggested by the fact that in the global Rorschach comparisons, which were also significantly related to the ward behavior ratings, $(A + Ad + Aobj) \%$ was merely one of a

large number of factors which were considered together, and, as indicated by the clinician who made the comparisons, was given only minimal consideration. Nonetheless, it is likely that we have here a specialized instance where behavior in a broad sphere of activities is sufficiently overdetermined by a single personality attribute so that changes in the latter are able to account for a significant proportion of change in the former.

In considering this result, it is important not to lose sight of the specific subject population and, perhaps even more important, the particular criterion of change that was employed. It seems much less likely that $(A + Ad + Aobj) \%$ would play so significant a role if one were dealing with the adjustment in the community of a group of non-psychotic patients receiving psychotherapy. Muench (1947), for example, found that his patients (apparently nonpsychotic) displayed little change in animal content following nondirective therapy, while Barry et al. (1952) found that pre- to posttherapy changes in animal content for his 31 patients (for the most part, nonpsychotic) failed to correlate significantly with judgments of adjustment level.

While, therefore, the results of the present experiment indicate that $(A + Ad + Aobj) \%$ may be reflecting aspects of the personality which play an essential role in the everyday hospital ward adjustment of the chronic psychotic patient, they do not justify the conclusion that this index, when treated in isolation, may in general be safely considered as a sensitive indicator of personality modification following therapy.

SUMMARY

The relative effectiveness of changes in 11 quantitative Rorschach indices and of global Rorschach evaluations as measures of response to a therapeutic program was assessed by comparison with changes in independent ratings of ward social adjustment. The

subjects employed were male and female hospitalized chronic psychotics, and the treatment program consisted, for the most part, of an intensive schedule of ancillary therapies.

The results indicated that judgments based on a global assessment of Rorschach protocols were significantly related to the independent criterion, while, with the exception of (A + Ad + Aobj) %, no one of the quantitative Rorschach indices reflected this criterion adequately.

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Some Effects of Non-Personality Factors on Rorschach Performance

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Since 1921, the year in which Hermann Rorschach published his *Psychodiagnostik*, a monograph describing his test, the "ink blot" test has gained ever-increasing attention as both an experimental and a diagnostic device. Concomitant with its growing role as a practical tool, the Rorschach test itself became the subject of much experimental scrutiny and controversy, in an effort to discover both its strengths and limitations. Much of this experimentation concerned itself with individual Rorschach test factors or *determinants*, the verifiability of which, as Beck (1940) has pointed out, is one of the major foundations upon which the test stands. It early became apparent, however, that the parameters affecting performance included not only the personality factors, but also, as Sarason (1950) demonstrated, such non-personality determinants as: (a) the purposes of testing, i.e., the reasons given by the Examiner and the preconceptions of the Subject; (b) the time and place of testing; and (c) the Examiner himself. It becomes important to understand these factors clearly when we attempt to apply interpretive schemes to Rorschach data based upon statistical norms, since these assume that the data have emerged from an essentially standard situation.

The results of research designed to meet this need for more information have been appearing in greater volume as more has been understood concerning the dynamics of the test situation and of the Examiner-Subject relationship. There has been, however, a conspicuous lack of organization of these results. It is felt that the need for such a systematization of findings is becoming more acute, since the current Zeitgeist is bringing the interpersonal aspect of psychological test-

ing, as well as psychotherapy, into sharper focus. This paper will therefore attempt to organize, and, it is hoped, give a meaningful perspective to the findings in the area of the influence of non-personality determinants on test performances.

For the purposes of this paper it has been convenient to posit the four following categories of major focus: (a) Overt set. In these studies Ss were explicitly instructed to attempt to produce various types of responses and the effects of such induced "sets" were measured; (b) Covert set. An attempt was made to induce particular sets in Ss in a more subtle manner, e.g., inducing an "anatomy set" by allowing Ss to see pictures of operations while "waiting" to take the Rorschach. In these studies no explicit instructions were given to Ss concerning any type of response since the intention was to measure the effects of the subtly induced set; (c) Situational factors. Less clearly defined sets were induced in exposing Ss to various situations prior to testing; and (d) Examiner variables. The effects of personality and sex variables of the Examiner were studied. In addition the rapport between S and E was considered.

THE EFFECTS OF CONSCIOUSLY ASSUMED SETS

In his discussion of the influence of volition on some test determinants, Rorschach (1942) distinguished between those factors which could be increased at will and those which were less subject to such an increase. In the case of the former he felt that, if instructed to do so, Ss were capable of producing clearer percepts ($F+$), of ordering responses in a rigid sequence ranging from *W* (responses to the blot as a whole) to *D* (responses to relatively common details within the

blots) to *Dd* (responses to rare details), and of responding with greater or fewer interpretations involving *A* (animals) as the content. In each case, however, these deviations from the ordinary mode of responding were thought to be accompanied by a general lowering of the quality of percepts and involving in particular a decrease in *W* and *M* (human movement) responses. On the other hand, Rorschach indicated that only *Ss* capable of giving many *W* and *M* responses in the usual test situation were capable of increasing the number of such percepts through a conscious effort. Thus, in the case of these factors, an increase in productivity was thought to depend upon an individual constitutional tendency, and the abilities involved in making such responses were considered to be in the nature of talents. However, he felt that the production of *C* (color responses) could be influenced to some extent by the creation of a conscious set. Despite this apparent difference, he believed that the relationship between the number of *M* and the number of *C* responses remained constant.

These statements provided a number of hypotheses for a series of studies described by Hutt, Gibby, Milton and Pottharst (1950). They have reported that *Ss* who were instructed to see *M* percepts would do so in a retest to a significantly greater degree than could controls. Furthermore, these new *M* responses were of a type commonly believed to be qualitatively rich and meaningful. Notable shifts in *Erlebnistypus* (*M:C*) resulted since the increase in *M* responses was not accompanied by a corresponding increase in *C* responses. The finding that *Ss* could significantly increase their *M* responses when instructed to see people in action was confirmed in a replication study by Allen and Dorsey (1954). Gibby (1951) investigated the stability of those Rorschach variables presumed to measure intellectual traits. His three groups of experimental *Ss* were instructed either to see *M*, to see as

many *D* as possible, or to see *C*, *F* + and *H* on a retest. He found $W\%$ and $(D+Dd)\%$ to be highly unstable with $W\%$ showing a significant decrease for all groups on retest and $(D+Dd)\%$ showing a significant or nearly significant increase for all groups. In addition, significant changes in $A\%$, *R* and number of content categories were found when a set was established to alter those particular variables. The $F+\%$ factor, however, was highly stable, even when *Ss* were instructed to emphasize good form.

Two studies which focussed on the reliability of the Rorschach technique also provided data on the volitional modifiability of responses to the Rorschach. Fosberg (1941) in the earlier of these studies asked *Ss*, upon retest to make the best possible impression, or in other cases, the worst possible impression, that they could. Results, reported in the form of correlations indicated a high degree of stability for all indices under all conditions. Because of some concern over the statistical analyses involved, Fosberg's study was replicated by Carp and Shavzin (1950) with a counterbalanced test-retest paradigm for the two experimental conditions. The correlations they reported for separate indices revealed that *D*, *Dd*, *F* +, *F* - *F*, *H* + *Hd*, *A* + *Ad*, and *R* were relatively stable while *W*, *M*, *CF* and color total were comparatively unstable.

These studies challenge some of Rorschach's beliefs concerning the stability of test scores. In particular they contradict his notion that *Ss* can readily change the $F+\%$ and that *Erlebnistypus* is a stable ratio, unalterable by conscious effort. The changes in both *M* and color total reported by Carp and Shavzin (1950) for example, occurred even where no direct suggestion was used. It should be noted, however, that in some respects the test of Rorschach's thinking regarding *M* and *W* stability has not been completely adequate. A satisfactory test would require a direct comparison of the capacity to increase,

volitionally, the number of desired responses between those Ss originally giving many and those originally giving few.

THE EFFECTS OF COVERTLY ESTABLISHED SETS

Granting that Ss are capable of altering their responding as the result of direct suggestion, the next problem raised is how sensitive is the Rorschach to more subtle suggestion and what effects might less direct influences have on responses. In a widely quoted study, Coffin (1941) found that having Ss read one of two experimentally created articles attributed to a Harvard professor prior to testing in which it was asserted that a high status group saw either *W* and *A* responses or *D+* inanimate responses would result in their seeing a predominance of the combination mentioned in their article. Abramson (1951), using group testing, was also able to cause an increase in *W* and *D* responses by "informing" his groups that individuals of high status tended to perceive a predominance of one type or the other, and that this tendency was related to intelligence. In addition Abramson observed concomitant changes in other categories. Ss "set" to see *W* responses showed significant decreases in *R*, *D*, *Dd*, *FM*, *M:C* ratio, *F%* (Klopfer), *A%*, Beck *P* and Klopfer *P* and significant increases in *W*, *Z* and *C*. Ss set to see *D* responses on the other hand, showed significant decreases in *W*, *A%*, *H+* *A%* and Klopfer *P* and significant increases in *R*, *D*, *Dd*, *m* and *Fc*.

Norman, Liverant and Redlo (1952), arguing that studies of the above type created sets directly related to the testing situation, decided to investigate the effects of an even more subtly induced set. Using a test-retest paradigm they attempted to establish a "food" set in one group of Ss and a "movement" set in another through the use of antecedent tasks involving the examination of either 40 colored food advertisements or 20 colored and 20

achromatic photographs of people in action respectively. For the "food set" group, the changes in *R*, *CF%*, (*CF* + *C*) % and Food % were evaluated. Only *R* showed a significant change (a decrease at the 10% level). For the "movement set" group differences between *R*, *Fm%*, *M%*, Total *M%* and *H%* were studied and again only *R* showed a significant change (this time a decrease at the five percent level). One must note, however, the failure to conduct an inquiry in this study.

In a similar study, Rabin, Nelson and Clark (1954) had Ss wait in a room decorated with either an array of anatomical charts or photographs of nude or semi-nude females. They found no significant differences between these groups and a control group in the number of sex and anatomy responses given.

This series of studies appears to affirm the previously noted instability of *R*, the location indices, some of the commoner content categories, and a few of the determinants. The failure of Norman *et al* (1952) to find any changes in determinants may be related to the noted omission of an inquiry in their study.

THE INFLUENCE OF SITUATIONAL FACTORS

Studies falling under this rubric differ from those which attempted to establish specific sets in that the created set was usually not well defined and less of an attempt was made to predict the effects of the imposed situation. In a sense, therefore, these were exploratory studies designed to provide data about the practical effects on Rorschach responses of being subjected to certain stresses, undergoing certain types of training, or having already taken either the Rorschach or other psychological tests.

Harrower-Erickson and Steiner (1941) investigated the effect on subsequent retests of taking the Rorschach as a group test. Although their data were not reported in terms of deviations from chance expectancy, the trends

they found suggested that simple repetition of the test was a far more serious factor than those changes in administration involved in group testing. In a later, and comparable study, Rohrer and Edmondson (1956) seem to have confirmed this finding. Comparing group and individual records, significant differences were found in only two indices, with those Ss who took the test individually showing a greater percentage of anatomy responses and a greater response production on cards VIII, IX and X. Comparison of the first administration (disregarding type of administration) to the second, revealed significant differences in 12 indices. These were: (a) increases in $D\%$, $Dd\%$, $S\%$, $Hd\%$, $Ad\%$, $At\%$, $F\%$ (Beck), and R ; and (b) decreases in $c\%$, $FC\%$ and P . Nearly all of the changes observed by Harrower-Erickson and Steiner were in the direction found by Rohrer and Edmondson. The increase in R on the second test which was found in both of these studies was also noted by Blechner (1954) in a study discussed below.

Gibby, Stotsky and Miller (1954) were concerned with the effects that other, previously administered, psychological tests might have on responses to the Rorschach. Accordingly, four groups of 20 outpatients were given either the Bender-Visual Motor Gestalt Test, the Thematic Apperception Test, the Wechsler-Bellevue Intelligence Scale or the Goldstein-Scheerer Color-Form Sorting Test prior to the Rorschach. In a fifth group, the Rorschach was given as the first test in the battery. Analyses of variance which were done comparing 11 scoring categories showed no differences that even approached significance.

It is reasonable to wonder whether certain types of training or perceptual experiences might predispose a given S to respond to particular determinants or to use certain locations more than he otherwise might. Blechner (1954) and Leventhal (1956), were concerned with precisely this problem.

The former attempted to increase color responding by exposing Ss to a lecture on visual color perception theories and a session during which slides of brightly and variously colored bits of oddly shaped gelatin papers were shown, some of which suggested an association between the form of the paper and its color. She found subsequent increases in R and color responses but also noted similar increases in the records of a control group. Since she failed to compare the two groups, her results are inconclusive.

Leventhal (1956) utilized two types of perceptual training to influence W and Z responses. His analyses focussed on only the first response to each card in order to control for R and he found that one of his training procedures (practice with the multiple-choice modification of the Gottschaldt figures) actually resulted in a significant decrease in W and Z as compared with controls. Although training with the Mooney Closure Test figures resulted in an increase in W and Z , this was not significantly greater than the increase found in the control group.

Since the Rorschach is usually administered during a stressful period in the life of the S, it is important to understand the specific effects of stress on responding if we are to keep such effects from clouding our understanding of the basic personality picture. Only three studies have approached this problem, with each studying a different type of stress. In a well executed study, Eichler (1951) induced stress by administering three electric shocks of increasing intensity to his Ss while they engaged in a test other than the Rorschach. Following this he administered the Rorschach under the threat of still more intense shock. Under these circumstances he predicted and found that Experimental Ss gave (a) more weighted shading responses; (b) fewer W responses; (c) lower R ; (d) more oligophrenic details (Do) than matched control Ss.

Klatskin (1952) studied a group of women who were undergoing presum-

ably great stress (primiparous obstetrical patients on the day prior to discharge and other patients on the day prior to undergoing gynecological surgery). It was found that they showed a Rorschach profile significantly different in many respects from that of a matched control group, with the difference being in a direction interpretable as indicating greater pathology.

In another study, Henry and Rotter (1956) induced stress by instructing Ss that the Rorschach was used to discover the extent of mental disturbance. As the authors predicted, the experimental Ss had a lower *R*, higher *F* + % and gave more *P* and *A* when compared to controls.

A comparison of the findings of these studies bearing on the effects of stress reveals that a lowered *R* was found in all cases and, in the two studies which reported on *M*, no changes were found. Otherwise, many of the results were highly contradictory which may be as much a function of the types of stresses involved as the instability of the indices.

A pair of studies, by Meltzoff, Singer and Korchin (1953) and Singer, Meltzoff and Goldman (1952) were devoted to studying the modifiability of *M* responses resulting from a particular type of stress. In both studies it was found that following a prolonged period of motor inhibition, Ss made more *M* responses.

In a unique study, Kimble (1945) compared records of Ss tested individually and in the presence of at least two other people. He found that only the *C* index, out of 23 tested, significantly changed in the group situation. Such a finding, it should be noted, may be expected on the basis of chance alone.

A summary survey of the results of the type of studies discussed reveals few overall consistencies and much need for further study. It is clear that *R* is highly susceptible to change in a variety of situations. It has also been demonstrated that the pattern of *M*

responding is alterable, and that the location scores are relatively unstable. However, many of the other findings are contradictory. There is considerable need to explore further the effects of training and the various dimensions of the stress variable and their relation to Rorschach responding.

EXAMINER INFLUENCE ON RORSCHACH RESPONSES

Of all research to date, studies dealing with examiner influence have perhaps the most direct relevance to the standard use of the Rorschach. If the picture which emerges from the record is to some extent a reflection of the personality of the Examiner, the interpretative significance of the instrument is seriously threatened unless we have a clear idea of how the examiner's influence is likely to operate.

Studies done in connection with this problem have adopted different lines of attack. The least complex approach has involved a measure of the relationship between a single type of behavior, or characteristic, of the examiner and the subsequent effect on a particular type of response. Wickes (1956), for example, demonstrated that by saying "fine," "good" or "all right" or nodding his head after *M* responses he was able to elicit more *M*s than in the standard administration. Gross (1959) used the same types of reinforcement for *H* responses and elicited significantly more *H*s from experimental Ss than from controls.

The effect of the sex of the examiner on the elicitation of overt and covert sex responses was studied by Rabin, *et al.* (1954), Curtis and Wolf (1951) and Alden and Benton (1951). The first two found significant differences between the numbers of overt and covert sex responses appearing in the records of Ss tested by male and female examiners. Rabin, *et al.* have stated explicitly that with a female examiner, male Ss produced significantly fewer sex responses. Alden and Ben-

ton, on the other hand, found no differences in either number of such responses or numbers of Ss making them when comparing the records of a male examiner with those of a female examiner.

Another of the less complex approaches is one in which no effort is made to define the examiner characteristics responsible for the differences seen in the records given by their Ss. The study by Cerf (1947) is an example of this approach. Comparing the records elicited by five examiners for *R*, he found 15 critical ratios out of the possible 36 comparisons, to be significant.

Another study which dealt only with the differences in the records elicited by various examiners was done by Gibby, Miller and Walker (1953). They found significant variation for the categories *F*, *C*, *FY* and *YF*.

Gibby (1952) attempted to determine whether important differences in the results of examiners was a function of the type of inquiry they conducted. Therefore he studied the records of a group of examiners whose inquiries were unstandardized and those of a group of examiners using a standardized inquiry. When he compared the scoring of the free association alone to the scoring of the free association plus the inquiry, he found that both groups showed significant changes on almost precisely the same determinants (*F*, color, shading) indicating that the type of inquiry used is probably of less importance than differences between examiners.

Baughman (1951) demonstrated that within the records of 15 examiners there were significant deviations from theoretical values set up on the basis of the observed medians for the entire set of records on 16 separate indices. Furthermore, through a comparison of the records of individual examiners with the group medians it was made apparent that five examiners deviated significantly on from seven to 12 indices while five others deviated on only one or none of the in-

dices, suggesting that some examiners contribute relatively little to the records obtained while others contribute a great deal.

Perhaps the earliest and best known study in this areas was conducted by Lord (1950). Thirty-six Ss were each tested by three examiners. On one occasion a standard administration was used, on a second the examiner was "warm, charming, appreciative" in manner and on a third the examiner was a "harsh, rejecting authoritarian figure." The most dramatic finding of her study was that much of the variability in the records was attributable directly to the personality of the examiner regardless of the order or type of administration involved. This would suggest that the examiner cannot successfully conceal his own dynamics by assuming a role. Further studies utilizing personality measures of the examiners are therefore felt to be in order.

Two studies in this direction have been reported. Sanders and Cleveland (1953) tested a group of students (with the Rorschach) before these students underwent training in Rorschach administration. These students were later used as examiners in the study. On the basis of the examiner's own tests and the ratings of them by Ss they tested, each examiner was rated for overt and covert anxiety. It was found that the most overtly anxious examiners elicited significantly more *R*, *S%* and *C* than did the least anxious while the most covertly anxious examiners elicited significantly higher *H*, *M*, *Y*, and Hostility scores, and significantly lower *A%*. Examiners ranked highest in overt hostility elicited significantly more responses suggesting passivity (*Y%*) and stereotypy (*A%*) and significantly fewer *H* responses and responses involving hostile content. Those ranked highest in covert hostility elicited fewer responses suggesting passivity (*Y%*) and stereotypy (*A%*) but more responses involving hostile content, more diversified content and more *H*.

Berger (1954) also attempted to relate examiner characteristics based on the Rorschach records of examiners taken when they were presumably naive. Correlation of examiners' records with those of the Ss whom they tested yielded significant rhos of .86 for *P*, .80 for *S* and $-.54$ for *Y* (out of the 12 indices studied).

Thus, research in this area, consistent with other reported studies, reveals the instability of certain scoring indices, *e.g.* *R*, and, furthermore suggests the operation of a significant complex of variables which was unrecognized by early users of the Rorschach. That the personality characteristics of the examiner can exert a powerful influence on the record of his *S* seems fairly obvious. Studies like those of Wickes (1956) and Gross (1959) suggest that something akin to the effect of operant conditioning may be operating. It seems likely, however, that even more subtle factors also operate which are as yet undiscovered. Further research aimed at uncovering and measuring such variables is essential if the Rorschach is to be improved as a device for appraising personality.

DISCUSSION

In the studies reviewed above, we have discovered a remarkable lack of systematization, with variables crucial to the Rorschach as well as matters of experimental design being treated in vastly differing, and, at times even idiosyncratic, ways. The method of administration, a logical starting point, is very rarely clearly outlined by authors, but in cases where it is we can note differences in the instructions given to the subjects. The subjects themselves have been drawn from widely different populations, varying from the traditional college sophomore to the schizophrenic patient. The method of inquiry also has received little explicit treatment, and usually is assumed to be "routine" rather than discussed by the author, but what work that has been done

leads us to believe that it is a crucial variable deserving of organized and consistent investigation. The scoring of the protocol shows division between the Beck and Klopfer advocates, so that studies of the same determinants may prove to be incomparable only because of the different scoring systems employed. It is almost anticlimactic to add that, in an area notorious for the fact that no two studies are conducted with precisely the same administration and scoring of the Rorschach, attempts at replication of findings are few and far between.

Recognizing the limitations imposed by the lack of internal consistency, and realizing that even studies which purport to be investigating similar relationships are doing so in so divergent a manner as to be incomparable, we have nevertheless attempted to summarize roughly the research status of each variable. In order to do so we have constructed the following table, listing those determinants most consistently investigated and the direction of the findings in the experiments carried out upon them. The table has been subdivided into columns similar to the organization of this paper, so that the reader will be aided in his attempt to interpret the findings. It should be noted that this table will serve as only a crude indicator of determinant stability since studies have been included which were, in our opinion, somewhat loosely designed and executed. It should also be noted that the total number of measures for some determinants has been artificially inflated where those determinants were subject to more than one test in the same study.

Due to the general lack of procedural uniformity and the occasional looseness of design, it would appear that those variables which, despite experimental manipulation, have consistently shown little variation, must indeed be stable and reliable measures. Those determinants showing the least variation are *CF*, *H*, and to a lesser extent, *F+*. On the other hand

TABLE I—Summary of Findings with Respect to the Various Rorschach Indices Studied

	Overt Set		Covert Set		Situational Effects		Examiner Differences		Totals	
	Sig.	Non-Sig.	Sig.	Non-Sig.	Sig.	Non-Sig.	Sig.	Non-Sig.	Sig.	Non-Sig.
W, W%	3	1	2	0	3	6	2	2	10	9
D, D%	0	1	2	0	2	4	1	3	5	8
Dd, Dd%	0	1	1	0	1	4	1	2	3	7
S	0	1	1	1	1	2	3	1	5	5
F, F%	0	1	1	1	2	4	3	1	6	7
F+, F+%	0	4	0	1	2	4	1	2	3	11
F—	0	1	0	0	1	1	1	1	2	3
M, M%	2	1	0	2	2	5	1	5	5	13
FM, FM%	0	0	1	2	1	2	2	1	4	5
m, m%	0	0	1	1	0	3	1	2	2	6
FC, FC%	0	1	0	1	2	0	1	1	3	3
CF, CF%	0	1	0	2	0	2	0	2	0	7
C, C%	0	1	0	1	1	1	1	2	2	5
FY	0	0	0	0	0	0	2	0	2	0
YF	0	0	0	0	0	0	2	0	2	0
Y, Y%	0	0	0	0	0	0	1	0	1	0
Total Shade	0	0	0	0	1	2	0	0	1	2
Sum C	0	2	1	1	2	3	1	1	4	7
A, A%	1	3	2	0	1	6	1	3	5	12
H, H%	0	1	0	2	0	4	1	2	1	9
Sex	0	0	0	0	0	0	2	1	2	1
Anat.	0	0	0	1	2	1	0	1	2	3
# Cat.	1	2	0	0	1	3	1	0	3	5
Obj.	0	0	1	1	0	1	0	0	2	1
M/sum C	1	0	1	1	1	0	0	0	2	2
Beck P	0	1	1	1	1	1	0	3	2	6
Klopf P	0	0	1	0	3	5	3	3	11	12
R	3	3	2	1	1	2	0	1	3	3
Z	1	0	1	1	1	2	0	0	3	12
8-10%	0	0	0	1	0	2	1	1	1	4
Totals	12	26	19	22	32	70	33	41	96	159

many indices, including those which have profound clinical interpretative implications, show gross variations, and may be classed as unstable. These include R, W, D, Dd, S, FY, YF, Y, M, FM, A%, F%, and Z.

At this point it seems important to note a distinction in the extra-personality variables which have been found to cause statistically significant variations in the production of a number of indices. Many of these, such as those used in the entire class of studies in which an overt set was established, many of those in the covert set studies and some of those in studies involving situational factors, are artificial insofar as there is little likelihood that they are ever encountered in the actual clinical setting. Their findings are of interest because they demonstrate

that one's tendency to make many types of responses is not somehow inherently fixed as was thought by some. Indeed, Ss have been found capable of consciously modifying their responses to result in significant variation in most scoring categories. They have also been found to be sensitive to relatively subtle extraneous influences which have caused significant increases or decreases in nearly all of the Rorschach indices. The practicing clinician however is apt to be much more concerned with variations which may result from the even more obscure, hence less well understood, variables which are not being controlled in most testing situations. Likewise he would consider it of little practical import to find that a particular determinant is unstable in the atypical sit-

uation providing it is impervious to the variables which operate in the usual clinical setting.

To elaborate on this point, a cursory investigation of the table would make it appear that the M determinant was at least moderately unstable. Closer observation, however, reveals that in two studies (Allen *et al.*, 1953; Hutt *et al.*, 1950) the significant increase in M was related to direct suggestion, in one (Carp and Shavzin, 1950), the change in M was in response to the instruction to make a poor impression, and in two others (Meltzoff *et al.*, 1953; Singer *et al.*, 1952) significant increases were found as a result of imposing unusual motor restrictions on Ss. However, none out of the eight measures taken under more nearly standard test conditions showed any significant change in M . The implication here is that under the ordinary conditions of administration, M is relatively insensitive to influence by external factors, and may be considered a stable index.

A similar condition exists with regard to $A\%$. Abramson (1951), Coffin (1941), and Gibby (1951) found significant variation in $A\%$ as a result of various sets which would not ordinarily operate in the test situation. Other studies show $A\%$ to be relatively stable when testing is carried out under conditions more closely approximating the standard.

It is perhaps most important from a practical viewpoint to focus on the determinants which have been found to vary in situations representing the closest counterparts to those found in the clinic. To explain such variations the first hypothesis to suggest itself is that the examiner will exert his greatest influence in that part of the testing situation where he interacts the most with the subject, the inquiry. Therefore if we consider the shading determinants (FY , YF and Y) as a class, we may hypothesize that much of their instability is a direct reflection of the fact that shading determinants are nearly always elicited in

the inquiry, rather than given spontaneously during the free association. Since the process of inquiring differs radically between examiners, and a complex subject-examiner interaction is involved, it should lead to the highest influence of non-test, individual difference factors. It is those factors which presumably are operative in eliciting shading determinants, and which lead to the great instability of those determinants. Moreover, if this is the case, $F\%$ also will be unstable, since, should no other determinant emerge in the inquiry, the response is scored F by default. There is a remote possibility that the instability of FM can be explained as also being due to the necessity of non-spontaneous, examiner influences for elicitation, since often an animal percept is obtained in free association, with the FM scoring being derived from an elaboration during the inquiry.

This hypothesis also adequately covers those variables which have consistently been shown to be stable ($F+$, CF , H , Beck's P). According to this hypothesis, all content categories should show stability (H , Beck's P) as should $F+$, which is usually scored mechanically from tables of adequate form level. CF responses are usually given quite explicitly, during the free association, to colorful areas in the blots. Usually, if color is the principle determinant of a response, there is no need for a sensitive inquiry to elicit it. On the other hand, with FC , form is the principle determinant and it is the function of the inquiry to determine if color was also employed in forming the response. Thus we would predict from our hypothesis that CF would be a stable index, while FC would be relatively unstable. An examination of the table shows that this is indeed the case.

It is obvious, however, on further study, that the examiner exerts an influence on even the free association portion of the test interaction. Although CF , H and $F+$ are relatively stable, other indices which likewise

appear to be independent of the inquiry such as *R*, *W*, *D*, *Dd*, *S*, and *Z* show considerable instability. Variations in these categories can only be explained, therefore, on the basis of the initial structuring of the situation and the many subtle elements which account for the uniqueness of each examiner. Undoubtedly, as Schachtel (1945) has hypothesized, *S*'s response tendencies are closely related to the type of subjective definition he has of the situation and this is apparently developed early enough in the interaction to render the location and organizing indices unstable.

In all instances, the variations discussed above were statistical ones. It is conceivable therefore, that many of these differences of single variables, while significant statistically, may be of little import interpretatively, especially when the protocol is considered in entirety, as it is in the clinical situation. To uncover those unstable indices which are of interpretative significance, while undoubtedly a formidable task, would be of prime importance in evaluating the practical applicability of the Rorschach by providing basic information on the question of overall Rorschach reliability.

In suggesting directions which future researchers might take, one is embarrassed by the "riches" he finds in this area. It is eminently clear that what has been done till now has served only to suggest the magnitude of the problems which lie ahead. It is our bias that the area which should be attacked initially is that dealing with the role the examiner plays in the production of test material. This is important both because it will contribute pertinent knowledge about an instrument on which many people rely in dealing with the problems of patients and also because it will undoubtedly provide information which will have relevance for other test situations and possibly interview situations of a less structured type. More specifically, studies like those of Lord (1950), Sanders and Cleveland (1953) and Berger

(1954) need to be done in order that known characteristics of the examiner may be related to idiosyncratic reactions elicited from tested *Ss*. Perhaps an even more fundamental need is for investigations of the varying effects of different administrative procedures, as has been urged by Hertz (1951). This review lends evidence to her contention that the mode of structuring the task and conducting the test itself, especially the inquiry, has great bearing on the results acquired.

SUMMARY

Studies dealing with factors, apart from the personality of the subject taking the Rorschach, which influence the responses made, have been reviewed. These have been categorized according to whether they involved the overt or covert establishment of a set to respond in a particular way, the study of the effects of a general situation on the responses made, or the influence of particular examiners on the types of records which were elicited. Based on the findings in these studies, certain indices have been identified as relatively stable and others as being unstable. A distinction was drawn between those found to be unstable under circumstances which were not typical of the actual testing situation and those which were variable in the usual clinical interaction. It was concluded that more systematic research needs to be done, especially with regard to procedural differences in administration and personality differences in examiners.

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BOOK REVIEWS

CLINICAL PSYCHOLOGY IN THE USA AND IN FRANCE

1. Daniel Brower and Lawrence E. Abt, *Progress in Clinical Psychology*, Volume III, 1959, N.Y., Grune & Stratton.
2. Pierre Pichot, *Les Tests Mentaux en Psychiatrie*, 1949, Paris, Presses Universitaires de France.
3. André Rey, *L'Examen clinique en Psychologie* (The clinical examination in psychology) 1958, Paris, Presses Universitaires de France.
4. Dimitri Voutsinas, *Dix années de psychologie française (1947-1956)* (Ten years of French Psychology) 1957, Group d'études de psychologie de l'université de Paris.
5. *Documentation sur la psychologie française*, 1958, Group d'études de psychologie de l'université de Paris.

The title of a recent book by Rey (3) suggested an interesting comparison between practices in France and in the USA, as presented in the most recent volume of Brower and Abt's *Progress in Clinical Psychology*. (1)

However, after reading Rey it seemed at first that this book did not truly represent clinical psychology in France. The question is whether this is because Rey is professor of educational psychology or because his chair is in Geneva. Or is the author merely presenting a very personal view? After a 22 page long discussion of the role of psychology as a medical ancillary science he discusses at some length intelligence tests and some non-verbal performance tests with an oblique reference to projective tests. The most interesting part of the small volume is the description of six rather novel tests — five cognitive and one neurological — constructed by the author. There is hardly a word about personality tests in the book, let alone about psychotherapy.

Can the picture that emerges be considered representative of clinical psychology in French speaking countries? There are those who think so. In the last chapter of Brower and Abt, David discusses clinical psychology in other lands and holds out little current hope for clinical psychology in France. Voutsinas

mentions in the preface to his convenient collections (3-4) of bibliographic references to psychological papers published in French journals during the years 1947-1957, that in France psychology often speaks with the voice of the non-psychologist. As a matter of fact a good deal of the psychological papers and books in France are published by individuals whose primary training was not psychology but law, medicine, biology, engineering or even military science. One of the best texts on the use of psychological tests in psychiatry is actually written by Pichot who is a psychiatrist (2).

Two facts contribute to this state of affairs: in the first place, students of all departments in French universities, may — and many indeed do — attend lectures on psychology as part of a self selected diet of cognates. Men of the stature of Binet, Pieron and Ribot gained audiences which were not limited to future psychiatrists or psychologists. In the second place, it was not till 1947 that a "License de Psychologie", i.e., a professional diploma in psychology, was established at the Sorbonne, the professional school of the University of Paris. In a country like France with its centralized and uniform administration and its emphasis on examinations and diplomas this had to retard the development of a professional identity for all psychologists, and especially for clinical psychologists.

On the other hand, this centralized administration made possible the establishment of a National Institute of Vocational Guidance with offices in all areas of France and its own journal and research center as well as a system of examinations and in-service training. Furthermore, since the last war there has been a remarkable increase in interest in psychoanalytic theory in France as shown by the many references in Voutsinas. Perhaps the differences between American and French clinical psychology are largely a matter of time, with American clinical psychology some years in the lead. A comparison of French clinical psychology with clinical psychology in other European countries would probably lead to a more useful appraisal.

That the growth of a distinct professional group of clinical psychologists in the USA has led to an increasing concern with professional problems as opposed to purely scientific problems is attested by several chapters in Brower and Abt. Schwartz discusses

the intra- and inter-professional difficulties and public responsibilities of the clinical psychologist, Piotrowski discusses the consulting function of the psychologist and proposes a model format for the psychological report while Gurvitz points to the economical problems of the psychologist. He points out that clinical competence includes the efficient and economical use of the client's and the psychologist's time. Other chapters deal with the social matrix within which the personality is embedded (Abt), the importance of contradictory evidence in psychological assessment, i.e., "disparity" data (Brower), the need for instruments aimed at the various levels of personality (Carr), and the decision process in selecting the proper instruments (Bachrach), while Hutt asks whether the demonstrated influence of the examiner on the client's test performance does not make questions concerning the reliability and validity of diagnostic procedures meaningless in the clinical setting.

Few, if any, psychologists in France are engaged in psychotherapy judging by the paucity of papers on the subject. The comparison of America with France will end here because the remaining second half of Brower and Abt deals with psychotherapy.

Butler reviews research based on Roger's "Freudian" technique. Joseph describes the current status of psychoanalytic theory and practice. Riess in his assessment of publica-

tions during 1956 and 1957 on diagnosis and therapy demonstrates "the increased rapprochement between the 'hardboiled' laboratory psychologist and the 'soft-headed' clinician." Wolskin warns us that mysticism and psychoanalysis are basically incompatible, basing his warning on an unusually informative analysis of the nature of mysticism. Asya Kadis and Markowitz present a detailed analysis of the literature on group therapy as well as a 340-item bibliography, while Wolman discusses play therapy. Diller delineates the role of rehabilitation in clinical psychology. A chapter by Kaplan on pharmacologic aids to psychotherapy discusses the effects of tranquilizers such as Chlorpromazine, Compazine, Mepazine, Reserpine and Meproamate, stimulants such as Pipradol, Frenguel, Ritalin and Marsilid and concludes with some notes on Mescaline and LSD-25.

In the penultimate chapter Phillips confronts psychoanalytic theory with the newer approaches of Rotter, G. A. Kelly and himself.

In conclusion it is clear from this review that the American lead in clinical psychology is indeed impressive. The very existence of a regular review publication of this kind is ample evidence by itself.

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ANNOUNCEMENTS

REGIONAL REPORTS

PHILADELPHIA DIVISION of the SOCIETY FOR PROJECTIVE TECHNIQUES

Program 1959-1960

October 23, 1959, 3:00 p.m., "Contribution of Psychology to New Concept of Psychiatric Diagnosis", Molly Harrower, Ph.D., Chairman of New State Advisory Council in Psychology; Professor of Research in Clinical Psychology in Department of Psychiatry at Temple University Medical Center.

December 18, 1959, 8:00 p.m., "Repression As An Explanation of the Poetzl Phenomena, Indirect Recall of Fleeting Impressions Via Dreams", Lester Luborsky, Ph.D., Professor of Psychology in Department of Psychiatry at University of Pennsylvania; Formerly senior research psychologist at Menninger Foundation.

January 22, 1960, 8:00 p.m., "Impressions of European Psychology", Zygmunt Piotrowski, Ph.D., Professor of Clinical Psychology at Jefferson Medical College; V. A. Consultant.

March 4, 1960, 8:00 p.m., "Notes in 'short-hand' and 'longhand' recording in the test situation", Raymond Birdwhistell, Ph.D., Coordinator, Child and Family Development Research, Eastern Pa. Psychiatric Institute; Formerly Professor of Anthropology, University of Buffalo.

May 20, 1960, 8:00 p.m., "Overt Behavior as Predicted by Projective Techniques, Panel Discussion", Zygmunt Piotrowski, Ph.D., Chairman.

Jules C. Abrams, Ph.D., Private Practice; Psychologist at Mahanemann Medical College and Hospital; Temple University Reading Clinic.

Thomas J. Johnson, Ph.D., Chief Psychologist, Adult Unit, Eastern Pennsylvania Psychiatric Institute.

Carlton W. Orchinik, Ph.D., Psychologist,

Municipal Court of Philadelphia; Youth Study Center.

Harry J. Woehr, Ph.D., Management and Consulting Psychologist, Harry J. Woehr and Associates.

All meetings held at Jefferson Medical College, 2nd Floor Lecture Room, 1025 Walnut Street.

All meetings open without charge. For further information please contact:

Mrs. Pat Bricklin, Secretary, Reading Clinic, Temple University.

Stanton B. Felzer, Ph.D., President, Philadelphia Division, Soc. for Projective Techniques, Harry J. Woehr & Associates, 901 Girard Trust Building, Lo 7-0834.

WORKSHOPS

The University of Chicago announces two workshop seminars in the Rorschach test in the summer of 1960. The subject the first week will be: Basic problems of administration. Processing the associations. Psychologic significance of the test variables. The whole personality in the Rorschach test. Introduction to interpretation.

The second week: Advanced clinical interpretation. Overt symptoms and their underlying source traits as leads to diagnostic differentiation. The problems of neurosis or schizophrenia; of organic or psychodynamic reaction patterns. Schizophrenia in children. Implications for treatment. Dr. S. J. Beck will conduct both seminars. The dates are: July 5-9; July 11-15. Interested persons may write to: Workshops, Department of Psychology, The University of Chicago, Chicago 37, Illinois.

CALL FOR A.P.A. SYMPOSIA

Anyone who is interested in presenting a symposium at the annual convention with the A.P.A. in September is invited to submit his proposal to Bertram R. Forer, 2170 Live Oak Dr., East, Los Angeles 28, California.

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Purdue University
Lafayette, Indiana F 1956
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Clinical and Ed. Psychology
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Downey, Ill. A 1952
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Chapel Hill, N. C. F 1957
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941 Stonehill Lane
Los Angeles 49, Calif. (Ph.D.)
A 1949
- EISNER, Betty G. (Ph.D.)
530 Gretta Green Way
Los Angeles 49, Calif. St. Aff.
1955
- ELDRED, Donald M.
Psychology Department
Vermont State Hospital
Waterbury, Vt. A 1948
- ELIZUR, Abraham (Ph.D.)
6 Tel Hai Street
Tel Aviv, Israel A 1949
- ELLIOTT, Merle H. (Ph.D.)
1025 Second Avenue
Oakland 6, Calif. A 1944
- ELLIS, Albert (Ph.D.)
Parc Vendome
333 W. 56th Street
New York 19, N. Y. A 1950
- ENOCHS, Neil
366 Marie Avenue
Los Angeles 42, Calif. St. Aff. 1954
- EPSTEIN, Hans L. (Ph.D.)
722 W. 176th Street
New York 33, N. Y. A 1944
- ERICSON, Mrs. Helen
11844 E. Deana Street
El Monte, Calif. A 1954
Aff. 1954
- ERON, Leonard D. (Ph.D.)
Rip Van Winkle Foundation
454 Warren Street
Hudson, N. Y. F 1955
- ESTRADA, Mrs. Carol Griffin
Departamento de psicología
Facultad de Medicina
Popayan Colombia, SA A 1951
- EVANS, John T. (Ph.D.)
85 Otis Street
Newtonville 60, Mass. A 1951
F 1957
- EVANS, Ray B.
4155 Jackson Avenue
Culver City, Calif. A 1954
- EVERETT, Evalyn G. (Ph.D.)
Box 51
Imola, Calif. A 1953
- EXNER, John E. Jr.
Bur. of Testing & Research
De Pauw University
Greencastle, Indiana A 1957
- FABRIKANT, Benjamin (Ph.D.)
Psychological Service Center
765 Teaneck Road
Teaneck, New Jersey A 1959
- FARBEROW, Norman L. (Ph.D.)
4211 Holly Knoll Drive
Los Angeles 27, Calif. A 1949

- FATERSON, Hanna F. (Ph.D.)
1 Sheridan Square A 1943
New York 14, N.Y. F 1946
- FEHRENBACH, Dr. Alice
3232 S. Josephine St.
Denver, Colo. A 1951
- FEIFEL, Herman (Ph.D.)
VA Mental Hygiene Clinic
1031 S. Broadway A 1943
Los Angeles 15, Calif. F 1956
- FEINBERG, Henry
15886 La Salle
Detroit, Mich. A 1949
- FELDBERG, Theodore M. (M.D.)
11 E. Chase Street
Baltimore 2, Md. A 1944
- FELDMAN, Dorothy A. (Ph.D.)
5225 Ellsworth Avenue
Pittsburgh 32, Pa. A 1952
- FELDMAN, Irving (Ph.D.)
80 Poplar Ave.
W. Long Branch, N.J. A 1953
- FELZER, Stanton B., (Ph.D.)
2014 North John
Russell Circle
Elkins Park 17, Pa. A 1954
- FERGUSON, Kingsley G. (Ph.D.)
Psychology Department
Westminster Hospital
London, Ontario, Can. A 1954
- FERRACUTI, Franco (M.D.)
Social Science Res. Center
Univ. of Puerto Rico A 1954
Rio Piedras, Puerto Rico
- FEUERBURGH, Joseph (Ph.D.)
15 Stuyvesant Oval
New York 9, N.Y. A 1957
- FICHMAN, Lionel L. (Ph.D.)
241 South Sepulveda Blvd.
St. Aff. 1954
Los Angeles 49, Calif. A 1957
- FILMER-BENNETT, Gordon
Psychology Dept. (Ph.D.)
Univ. of Portland A 1954
Portland 3, Oregon F 1956
- FINE, Harold J. (Ph.D.)
VA Mental Hygiene Clinic
355 Fairfield Avenue
Bridgeport, Conn. A 1955
- FINE, Reuben (Ph.D.)
225 W. 86th Street
New York 24, N.Y. A 1949
F 1954
- FINN, Michael H. P. (Ph.D.)
7820 Ellenham Ave. A 1954
Ruxton, Maryland F 1958
- FISCHER, Liselotte K. (Ph.D.)
219 Bryant Street
Buffalo, N.Y. A 1949
- FLEMMING, Edward L. (Ed.D.)
10585 Lakeview Road East
Jacksonville 11, Fla. A 1954
- FONT, Marion McKenzie
627 S. Carrollton Ave. A 1942
New Orleans 13, La. F 1947
- FORER, Bertram R. (Ph.D.)
2170 Live Oak Drive E. A 1949
Los Angeles 28, Calif. F 1951
- FORER, Lucille K. (Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1953
- FORREST, Dr. Carol W.
c/o Mead Carney
Wiednerhauptstr 52
Vienna IV, Austria A 1951
- FORTIER, Robert H. (Ph.D.)
VA Hospital
Buffalo, N.Y. A 1956
- *FOSBERG, Irving A. (Ph.D.)
7831 Plum St. A 1940
New Orleans 10, La. F 1949
- FOSTER, Austin (Ph.D.)
The Psychopathic Hospital
University of Texas
Medical Branch A 1950
Galveston, Texas F 1955
- FRAMO, James L., Jr. (Ph.D.)
Eastern Penna. Psych. Inst.
Henry Ave. &
Abbottsford Rd. A 1955
Philadelphia 29, Pa. F 1957
- FRANCOEUR, Thomas A.
1070 Crevier Avenue (Ph.D.)
Ville St. Laurent
Prov. Que., Canada Aff. 1954
- FRANK, Lawrence K.
25 Clark Street
Belmont, Mass. H.M. 1954
- FRANKEL, Esther B. (Ph.D.)
Child Guidance Clinic
Children's Hospital
420-22 Cherry Street
San Francisco 18, Cal. A 1953
- FREAR, Edgar
Montrose, Pa. A 1950
- FRESCHI, Vincent J. (Ph.D.)
14 Penn Lane
West Chester, Pa. A 1960
- FREY, Mrs. Harriet K.
59 Francisco Avenue
West Caldwell, N. J. A 1953
- FRIEDMAN, Mrs. Gladys Miller
29575 So. Woodland Blvd.
Pepper Pike 24, Ohio A 1949
- FRIEDMAN, Howard (Ph.D.)
316 Southfield Drive
Fayetteville, N. Y. A 1951
- FRIEDMAN, Ira (Ph.D.)
29575 So. Woodland Blvd.
A 1954
Pepper Pike 24, Ohio F 1958
- FRIEND, Mrs. Jeannette G.
16 Greenough Circle
Brookline 46, Mass. A 1949
- FRISCH, Paul Z. (Ph.D.)
Psychology Department
Adelphi College
Garden City, N.Y. F 1956
- *FROMM, Erika O. (Ph.D.)
5717 S. Kenwood
Chicago 37, Ill. A 1940
- FROSTIG, Marianne (Ph.D.)
7257 Melrose Ave.
Los Angeles 46, Calif. A 1956
- FRY, Franklyn D.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952
- FRY, Mrs. Martha O.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952
- FUCHS, Seymour H.
140 F. 40th St.
New York 16, N.Y. A 1944
- GALLICO, Mrs. Margaret Wilson
Univ. of Dayton
Dayton 9, Ohio A 1957
- GARFIELD, S. L. (Ph.D.)
Nebraska Psychiatric Inst.
602 South 44th Ave.
Omaha, Neb. A 1959
- GASOREK, Miss Kathryn
29 West Henry St.
Linden, New Jersey A 1949
- GASTON, Charles O.
University of Texas
Medical Branch St. Aff. 1955
Galveston, Texas A 1957
- *GAUDET, E. Louise (Ph.D.)
210 E. 53rd St.
New York 22, N.Y. F 1940
- GAUDET, Frederick J. (Ph.D.)
210 E. 53rd St.
New York 22, N.Y. A 1949
F 1958
- GAVIRIA, Alvaro Villar, M.D.
Cra. 12 No. 20-69
Bogota, Colombia A 1957
- GEIL, George A.
915 Kings Avenue
Springfield, Mo. A 1943
- *GERING, Mrs. Evelyn E.
18100 Karen Drive
Tarrana, Calif. A 1940
- GERSHIN, Rev. Charles
Via Corbi Monastery, (Ph.D.)
Jemez Springs, N.M. A 1949
- GETOFF, Louis
317 West 90th St.
New York 24, N.Y. A 1956
- GIBSON, Robert L. (Ph.D.)
205 Riverside Drive
Tarpon Springs, Fla. A 1960
- GILBERT, Raymond R.
32 Halifax Street
Boston 30, Mass. A 1951
- GILLMAN, Mrs. Etta C.
16 Stevenson Avenue
Hartsdale, N. Y. A 1944
- GINANDES, Mrs. Janet
1150 Fifth Ave.
New York, N.Y. A 1957
- GLADFELTER, John (Ph.D.)
Dept. of Psychiatry
Southwestern Medical School
Dallas, Texas A 1958
- GLASS, Blanche (Ph.D.)
35 E. 85th St.
New York 28, N.Y. A 1955
- GOLDBERGER, Leo
Research Center for
Mental Health
New York University
21 Washington Place
New York 3, N.Y. A 1956
- GOLDBLOOM, Betty M. (Ph.D.)
5642 Darlington Rd.
Pittsburgh 17, Pa. A 1952
- GOLDFARB, William (M.D.)
530 West End Avenue
New York 31, N.Y. F 1944
- GOLDSTEIN, Dr. Fred J.
Los Angeles Psych. Services
8770 W. Whitworth Dr.
Los Angeles 33, Calif. A 1956
- GONDOR, Mrs. Lily H.
320 East 57th Street
New York 22, N.Y. F 1952
- GOODMAN, Morris (Ph.D.)
3 Wellington Road
Livingston, N. J. A 1953
- GOODNICK, Benjamin (Ph.D.)
Administration Building
Parkway and 21st
Philadelphia 3, Pa. A 1956
- GOOLISHIAN, Harold A. (Ph.D.)
1008 Camp Circle West
La Marque, Texas A 1952
F 1957
- GORDON, Thelma
307 W. 11th Street
New York 14, N.Y. A 1951
- GOTTLIEB, Mrs. Sophie B.
225 W. 86th Street
New York 24, N.Y. A 1943
- GRAHAM, Virginia T. (Ph.D.)
General Hospital, N-3
Cincinnati 29, Ohio A 1953
- GRASSI, Joseph R.
Bowman-Gray School of Med.
Wake Forest College
Winston-Salem, N. C. A 1942
- GRAVES, Winifred S. (Ph.D.)
4242 Cornelius Ave.
Indianapolis 8, Ind. F 1951

- GRAVITZ, Melvin A. (Ph.D.)
908 Kenbrook Court
Silver Spring, Md. A 1956
- GRAYSON, Harry M.
403 S. Bundy Dr.
Los Angeles, Calif. A 1951
- GREENBERG, Nathan
5417 Jeanne Mance Street
Montreal, Que., Can. A 1959
- GRIENE, Janet S. (Ph.D.)
65 E. 76th Street
New York 21, N. Y. A 1953
- GREENSTADT, William M.
35 E. 30th Street St. Aff. 1954
New York, N. Y. A 1955
- GRIER, Mary E. (Ph.D.)
2243 Harcourt Drive
Cleveland 6, Ohio A 1956
- GROFF, Marne L. (Ph.D.)
1003 Dreams Landing
Annapolis, Maryland A 1952
- GROSSMAN, Mrs. Marc J.
16950 S. Woodland Road
Shaker Heights 20, O. A 1949
- GROSSMAN, Searles A. (Ph.D.)
4004 Coleridge Road A 1951
Wilmington 2, Del. F 1954
- GUERTIN, Wilson H. (Ph.D.)
VA Hospital A 1950
Knoxville, Iowa F 1953
- GUINDON, Jeannine
39 Ouest Gouin Blvd.
Montreal, Que., Can. A 1951
- GUIORA, A. Zeev (Ph.D.)
4 Pines Street
Rehovoth, Israel A 1957
- GUNDLACH, Ralph (Ph.D.)
162 East 80th Street
New York 21, N. Y. A 1951
- GUREVITZ, Saul (Ph.D.)
680 West End Avenue
New York 25, N. Y. A 1949
- GURVICH, Mrs. Bernice M.
251 Willis Avenue
Hawthorne, N. Y. A 1950
- GURVITZ, Milton S. (Ph.D.)
54 Gateway Dr. A 1948
Great Neck, N. Y. F 1951
- GUY, William
Huron Valley Child Guidance
Clinic
310 S. Huron St.
Ypsilanti, Mich. A 1953
- HABER, Wm. B. (Dr.)
275 Central Park West
New York 24, N. Y. A 1953
- *HALLOW, William C. (Ph.D.)
422 Chestnut St.
Lebanon, Pa. A 1940
- *HALLOWELL, A. Irving (Ph.D.)
Box 14, Bennett Hall
Univ. of Pennsylvania A 1940
Philadelphia 4, Pa. F 1944
- HALLOWELL, Dorothy K.
3318 Midvale Avenue (Ph.D.)
Philadelphia 29, Pa. A 1947
- HALPERIN, Sidney L. (Ph.D.)
1710 Makiki St.
Apt. 1001, Oahu Tower
Honolulu, Hawaii A 1949
- HAI PERN, Fsther
189 A Bay State Rd.
Apt. 2A
Boston 15, Mass. St. Aff. 1954
- HALPERN, Florence (Ph.D.)
University Hospital
303 E. 20th St.
New York City, N. Y. F 1959
- HAMMER, Emanuel F. (Ph.D.)
685 West End Avenue A 1953
New York 25, N. Y. F 1959
- HAND, Dr. Mary Ella
432 Hamilton Place
Ann Arbor, Mich. A 1948
- HANDEL, Gerald
Social Research, Inc.
145 East Ohio Street
Chicago 11, Ill. A 1954
- HANSEN, Irvin (Ph.D.)
Psychology Department
University of Portland
Portland, Oregon A 1960
- HARLOW, Justin E. Jr.
308 Administration Bldg.
Univ. of Florida
Gainesville, Fla. F 1957
- HARMES, John M.
240 Smith Road
Manchester, N. H. A 1957
- HARRIS, Albert J. (Ph.D.)
Educational Clinic
Queens College
Flushing, N. Y. A 1951
- HARRIS, June (Ph.D.)
Bureau of Child Guidance
80 Lafayette St.
New York 13, N. Y. A 1941
- HARRIS, Robert A. (Ph.D.)
Austen Riggs Center Inc.
Stockbridge, Mass. A 1954
- HARRIS, Robert E. (Ph.D.)
The Langley Porter Clinic
University of California
Medical Center
San Francisco 22, Calif. A 1948
- HARRIS, William W.
210 E. 181st Street
Bronx, N. Y. A 1949
- *HARROWER, Molly R. (Ph.D.)
55 E. 86th Street
New York 28, N. Y. F 1940
- HAWKINS, Mrs. Hermione
4604 Keswick Road
Baltimore 10, Md. A 1951
- HAWORTH, Mary R. (Ph.D.)
Dept. of Psychology
Michigan State University
East Lansing, Mich. A 1959
- HAYS, Miss Berta
505 S. Harvard Blvd.
Los Angeles 5, Calif. A 1949
- HEATH, Douglas (Ph.D.)
Psychology Dept.
Haverford College
Haverford, Pa. A 1956
- HEBERT, Bernard
4368 Girovard
Montreal 28, Canada A 1955
- HEISLER, Verda (Ph.D.)
2306 - 6th Avenue
San Diego, Calif. A 1951
- HELLERSBERG, Elisabeth F.
641 Whitney Avenue (Ph.D.)
New Haven, Conn. A 1949
- HEMMENDINGER, Larry (Ph.D.)
1026 Park Avenue
Bridgeport, Conn. A 1950
- HENRY, William F. (Ph.D.)
5835 Kimbark Avenue A 1948
Chicago, Ill. F 1956
- HERNESS, Mrs. Christina
Amherst H. Wilder Child
Guidance Clinic
670 Marshall Avenue
St. Paul 1, Minn. A 1952
- *HERTZ, Marguerite R. (Ph.D.)
2835 Drummond Road
Shaker Heights, Ohio F 1940
- *HERTZMAN, Max (Ph.D.)
Dept. of Psychology
College of the
City of New York A 1940
140th and Convent Ave.
New York, New York F 1946
- HIGGINSON, Gordon K. (Ph.D.)
6040 N. Montana A 1954
Portland, Ore. F 1959
- *HILDEN, Arnold H. (Ph.D.)
628 Clark Avenue A 1940
Webster Groves 19, Mo. F 1943
- HILKEVITCH, Rhea R. (Ph.D.)
1550 Oak Avenue
Evanston, Ill. A 1954
- HILLSON, Joseph (Ph.D.)
Norfolk State Hospital
Norfolk, Neb. A 1956
- HILTMANN, Hildegard, Dr.
Professor of Psychology
Univ. of Freiburg F 1957
Bertoldstrasse 17, Germany
- HIMELSTEIN, Philip, (Ph.D.)
Dept. of Psych.
Univ. of Arkansas
Fayetteville, Ark. A 1956
- HINDS, Edith A. (Ph.D.)
1239 Lincoln Place
Brooklyn, New York A 1960
- *HIRNING, L. C. (M.D.)
R.F.D. #1
Katonah, N. Y. F 1940
- HIRSCH, Mrs. Janet F.
67-49 C 192nd Street
Fresh Meadows 65, N. Y. A 1948
- HOCH, Erasmus L. (Ph.D.)
5932 Anniston Road
Bethesda 14, Md. A 1954
- HOOKER, Mrs. Margaret W.
220 Reilly Street
Harrisburg, Pa. A 1951
- HOLANCHOCK, George
Box 138
Claymont, Dela. A 1957
- HOLMES, Frances B. (Ph.D.)
Whetstone Rd., R.D. 2
Harwinton, Conn. A 1950
- HOLODNAK, Helen Barbara
31-38-36th Street
Astoria 3, L. I., N. Y. A 1949
- HOLT, James M. (Ph.D.)
5554 Littlebow Road A 1956
Palos Verdes Estates, Calif.
- HOLTZMAN, Wayne (Ph.D.)
Hogg Foundation
University of Texas
Austin, Texas F 1959
- HOLZBERG, Jules D. (Ph.D.)
Box 351
Middletown, Conn. F 1954
- HOOKER, Mrs. Evelyn (Ph.D.)
400 S. Saltair Ave.
Los Angeles 49, Calif. F 1958
- HORLICK, Reuben S. (Ph.D.)
3004 N. Stuart Street
Arlington 7, Va. A 1951
- HORN, Daniel (Ph.D.)
321 West 57th St.
New York 19, N. Y. F 1959
- HOSHINO, Akira
Department of Psychology
International Christian Univ.
Mitaka Tokyo, Japan A 1959
- HOWARD, J. W. (Ph.D.)
Route 2
Rigaud, P. Q., Canada A 1954
- HOWARD, Stephen J.
3601 Marcia Drive Aff. 1954
Los Angeles 26, Calif. A 1958
- HOWLAND, Allan O.
Philadelphia Inst. for
Alcoholism & Narcotics
Addiction
915 Corinthian Ave.
Philadelphia, Pa. A 1951
- HUBER, Jack T. (Ph.D.)
310 East 55th St.
New York 22, N. Y. F 1958

- HUGHES, Robert M. (Ph.D.)
Suite 101
849 Peachtree St., N.E. A 1944
Atlanta 8, Ga. F 1954
- HUTT, Max L. (Ph.D.)
Department of Psychology
University of Michigan A 1947
Ann Arbor, Mich. F 1952
- IMRE, Paul
Spring Grove State Hospital
Catonsville 28, Md. A 1954
- INMAN, John M.
160 Tamalpais Road
Berkeley 8, Calif. A 1945
- ISAACS, Mark
Springfield State Hospital
Sykesville, Maryland A 1959
- IVERSON, Norman E. (Ph.D.)
North Central Medical Bldg.
2021 North Central Ave.,
Phoenix, Ariz. A 1956
- IVES, Margaret (Ph.D.)
St. Elizabeths Hospital A 1953
Washington 20, D.C. F 1955
- JACOBS, Martin E. (Ph.D.)
165 No. Village Ave.
Rockville Center, N.Y. A 1955
- JAHODA, Hedwig (Ph.D.)
500 W. 235th Street
New York 63, N. Y. A 1952
- JEFFREYS, Alvis W., Jr. (Ph.D.)
Western State Hospital
Staunton, Va. A 1952
- JEFFRIES, Mrs. Helen
14 East Sixth Street
Media, Pa. A 1956
- JOEL, Walther (Ph.D.)
9629 Brighton Way
Beverly Hills, Calif. A 1946
F 1950
- JOHNSON, Elizabeth Z.
VA Hospital (Ed.D.)
Lexington, Ky. F 1956
- JOHNSON, Richard B.
124th St. & 101st Ave. A 1953
Richmond Hill 19, N.Y.
- JOHNSON, Theresa
229 S. Maple Drive
Beverly Hills, Calif. A 1949
- JOHNSON, Thomas F. (Dr.)
4412 Concord Dr.
Trevose, Pa. A 1957
- JORTNER, Sidney
1425 Brooklyn Avenue
Brooklyn 10, N.Y. A 1959
- JOSEPH, Alice (M.D.)
114 E. 71st St.
New York 21, N.Y. A 1944
- *JUNKEN, Elizabeth M. (Ph.D.)
468 Lydecker Street
Englewood, N. J. A 1940
- KADINSKY, D.
8 P. Smolenski Street
Tel Aviv, Israel A 1946
- KADIS, Mrs. Asya L.
1060 Park Avenue
New York 28, N. Y. A 1944
- KAHN, David F. (Ph.D.)
Lexington School for Deaf
904 Lexington Avenue
New York 21, N. Y. A 1953
- KAHN, Marvin W. (Ph.D.)
University of Colorado
Medical School
4200 E. 9th Avenue A 1956
Denver, Colo. F 1959
- KAHN, Maj. Theodore C. (Ph.D.)
Chief Psychologist
USAF Hospital
APO 633 c/o P.M.
New York, N.Y. A 1953
F 1954
- KALINKOWITZ, Bernard N.
Graduate School of (Ph.D.)
Arts and Science
New York University
Washington Square
New York, N. Y. A 1954
- KALIS, Betty Lee (Ph.D.)
98 Levant St.
San Francisco 14, Calif. A 1956
- KAPIT, Milton E.
1 W. 85th Street
New York 21, N. Y. A 1950
- KAPLIN, Bert (Ph. D.)
Dept. of Psychology
Univ. of Kansas
Lawrence, Kansas A 1958
- KAPLAN, Herbert
Patricia Avenue
Fishkill, N. Y. A 1949
- KAPLAN, Norman (Ph.D.)
302 W. 35th St.
Savannah, Ga. A 1949
- KARSON, Samuel (Ph.D.)
Dade County Child Guidance
Clinic
1350 N.W. 14th St.
Miami, Florida F 1957
- KASS, Walter (Ph.D.)
4 Farley Road
Scarsdale, New York F 1955
- KATAGUCHI, Yasufumi
Natl. Inst. of Mental Health
Kohadai Ichikawa,
Chiba, Japan A 1958
- KATES, Solis L. (Ph.D.)
University of Massachusetts
Amherst, Mass. A 1949
- KATZ, Mrs. Florine
67 East 82nd Street
New York 28, N.Y. A 1953
- KATZ, Mrs. Harriet
516 East Maryland Avenue
Phoenix, Arizona A 1950
- KAUFMANN, Elizabeth M.
414 W. 121st Street
New York 27, N. Y. A 1950
- KAVKEWITZ, Henry (Ph.D.)
1060 Union Street
Brooklyn 25, N. Y. A 1955
- KELSEY, Howard Phelps
1252 Fourth Street
Sarasota, Fla. A 1944
- *KEMPLE, Camilla
20 W. 86th Street
New York 24, N.Y. A 1940
F 1946
- KENDIG, Isabelle V. (Ph.D.)
Ashton, Md. A 1944 F 1946
- KESSLER, Mabel G. (Ph.D.)
Montgomery County
Public Schools
Court House
Norristown, Pa. A 1952
- KEW, Clifton E.
32 Gramercy Park So.
New York 3, N.Y. A 1949
- KIDORF, Irwin W. (Ph.D.)
VA Hospital
Coatsville, Pa. A 1959
- KING, Francis W. (Ph.D.)
4 Kingsford Road
Hanover, N. Hampshire A 1952
- KINGSLEY, Dr. Leonard
1825 E. Patton Drive
Meade Heights
Ft. Meade, Md. A 1957
- KIRK, Virginia (Ph.D.)
Vanderbilt University
School of Medicine
Nashville 5, Tenn. A 1944
- KISSINGER, R. David
84 Fairview Place
Sea Cliff, N.Y. St. Aff. 1960
- KITAY, Philip M. (Ph.D.)
8707-35th Avenue A 1955
Jackson Heights 72, N. Y.
- KLASS, Walter K. (Ph.D.)
North Central College
146 N. Sleight Street
Naperville, Ill. A 1946
- KLATSKIN, Ethelyn H. (Ph.D.)
Dept. of Pediatrics
4084 LMP
333 Cedar St. A 1946
New Haven 11, Conn. F 1955
- KLEBAN, Morton H.
Nebraska Psychiatric Inst.
603 So. 44th Ave.
Omaha 5, Neb. St. Aff. 1959
- KLEIN, Abraham (Ph. D.)
433 W. 21st Street
New York 11, N. Y. A 1955
- KLEIN, Mrs. Beatrice
Woodstock, N.Y. A 1946
- *KLEIN, Eva L. (M.D.)
1148 Fifth Avenue
New York 28, N. Y. A 1940
- KLEIN, Louis S.
28894 Morlock
Livonia, Michigan A 1959
- KLEINBERG, Mrs. Rosalyn K.
6606 N. 11th St.
Philadelphia 26, Pa. A 1950
- *KLOPFER, Bruno (Ph.D.)
Box 2971
Carmel, Calif. F 1940
- KLOPFER, Walter G. (Ph.D.)
Dept. of Psychology
Univ. of Portland A 1946
Portland, Oregon F 1951
- KNAPP, Pearl G. (Ph.D.)
Dept. of Psychiatry
Cedars of Lebanon Hosp.
4833 Fountain Avenue
Los Angeles 29, Calif. F 1956
- KORDA, Mrs. Geraldine J.
1030 Prospect Blvd.
Pasadena, Calif. A 1949
- KORNER, Anneliese F. (Ph.D.)
Mt. Zion Psychiatric Clinic
San Francisco 15, Calif. F 1953
A 1950
- KORNREICH, Melvin (Ph.D.)
8 Kay Ave.
Jericho, L.I., N.Y. A 1951
- KORNRICH, Milton
67-29B Springfield Blvd.
Bayside 64, N.Y. St. Aff. 1958
- KOTKOV, Benjamin (Ph.D.)
8 Orchard Street
West Brattleboro, Vt. A 1949
- KOVNAR, Murray (Ph. D.),
Director Psychology Dept.
State Hospital
Jamestown, N. Dakota
- *KRAFFT, Mrs. Margaret R.
27 West 96th Street, Apt. 4C
New York 25, N.Y. A 1940
- KRAL, V. Adalbert (M.D.)
4145 Blueridge Crescent
Montreal, Que., Can. A 1953
- KRAMISH, Art A. (Dr.)
Chief, Psychology Service
V.A. Hospital
Knoxville, Iowa A 1957
- KRASNER, Leonard (Ph.D.)
VA Hospital
Palo Alto, Calif. A 1952
- KROUT, Maurice H. (Ph.D.)
1938 Cleveland
Evanston, Ill. A 1950
- KRUGMAN, Dorothy C. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1944

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New York 25, N. Y. A 1943
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P.O. Box 43
Tomkins Cove, N.Y. A 1941
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P.O. Box 43
Tomkins Cove, N.Y. F 1940
- KUSHNER, Malcolm (Ph.D.)
8460 S.W. 185th Terrace
Miami 37, Fla. A 1956
- KUTASH, Samuel B. (Ph.D.)
3 Park Road
Maplewood, N. J. A 1950
F 1951
- LAKIN, Harriet A.
1959 S. Crescent Heights
Los Angeles 34, Calif. A 1950
- LAMPL, Henry M.
266 Washington Ave.
Kingston, N.Y. A 1955
- LANDIS, Bernard
276 Riverside Drive
New York 25, N.Y. St. Aff. 1959
- LANDISBERG, Selma
166 East 35th St.
New York 16, N.Y. A 1950
- LASAGA, Jose I. (Dr.)
Calle 9, No. 407
Vedado, Habana, Cuba A 1957
- LASKOWITZ, David
3856 Bronx Blvd.
Bronx 67, N.Y. A 1953
- LAWRENCE, Ernest S. (Ph.D.)
240 S. La Cienega Blvd.
Beverly Hills, Calif. A 1955
- LAWRENCE, James F. (Ph.D.)
Area Medical Office
V.A. 30 Cornhill
Boston, Mass. A 1949
F 1954
- LAWRENSON, Thomas J.
13-D Yale Street
Nutley, N. J. A 1955
- LAZOVIK, David A. (Ph.D.)
University of Pittsburgh
Pittsburgh 13, Pa. F 1959
- LEBEAUX, Mrs. Thelma W.
106 Newton Avenue N.
Worcester 9, Mass. A 1944
- LEBOWITZ, Mrs. Anne
13746 Magnolia Boulevard
Van Nuys, Calif. St. Aff. 1956
- LEDER, Ruth
301 E. 21st Street
New York 10, N. Y. A 1950
- LEDWITH, Nettie H. (Ph.D.)
Pittsburgh Child Guid. Center
201 DeSoto Street
Pittsburgh 13, Pa. A 1948
F 1952
- LEE, Dorothy B.
33-33 82nd Street
Jackson Heights 72, N. Y. A 1950
- LEHMANN, Heinz E. (M.D.)
Verdun Protestant Hospital
Box 6034
Montreal, Que., Can. A 1943
F 1951
- J.EHRER, Ruth (Ph.D.)
Kansas Treatment Center
for Children
Third and Oakley Sts.
Topeka, Kans. A 1944
F 1954
- LEIDEN, Irving (Ph.D.)
750 Green Bay Rd.
Winnetka, Ill. A 1956
- LEONARD, A. T.
1067 Pine St.
Muskegan, Mich. A 1954
- LEOPOLD, Julius
69-53 185th St.
Flushing 65, N.Y. St. Aff. 1953
- LEPSON, David S. (Ph.D.)
1701 Parkline Dr.
Pittsburgh 27, Pa. A 1958
- LESSER, Erwin (Dr.)
University Guidance Center
University of Miami
Coral Gables 46, Fla. A 1958
- LEVENSTEIN, Mrs. Phyllis
3268 Island Rd.
Wantagh, L. I., N. Y. A 1948
- LEVEY, Archie
Ste. 33, Communits Apts.
Saskatoon,
Saskatchewan, Can. A 1956
- LEVI, Joseph (Ph.D.)
50 W. 72nd Street
New York 23, N. Y. A 1947
F 1954
- LEVINE, Abraham (Ph.D.)
263-45 74th Ave.
Glen Oaks, N.Y. A 1952
- LEVINE, David (Ph.D.)
Department of Psychology
University of Nebraska
Lincoln, Nebraska F 1960
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42 Deepdale Parkway
Roslyn Heights, L.I., N.Y. F 1959
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131 Jorelemon St.
Brooklyn 1, N. Y. A 1952
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39-25 47th Street
Sunnyside, L. I. C. 4,
N.Y. A 1952
F 1956
- LEVINSON, Mrs. Toby
232 Glenholme Ave.
Toronto, Canada A 1960
- LEVIT, Herbert I. (Ph.D.)
Dixmont State Hospital
Glenfield, Pa. A 1954
- LEVY, Henry Louis
11959 Nebraska Ave.
Los Angeles 25, Calif. A 1960
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14430 Union Avenue
Cambrian Park
San Jose, Calif. A 1948
F 1951
- LEVY, Sidney J. (Ph.D.)
7417 S. Oglesby Avenue
Chicago 49, Ill. A 1956
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2220 South Third Ave.
Arcadia, Calif. A 1953
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Carter Memorial Hospital
1315 West Tenth St.
Indianapolis 7, Ind A 1958
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Pound Ridge, N. Y. A 1952
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285 Fountain Road
Englewood, N. J. A 1953
- LIEBERMAN, Mrs. Janet Chase
1136 Fifth Ave.
New York 28, N.Y. A 1956
- LINDZEY, Gardner (Ph.D.)
Dept. of Psychology
University of Minnesota
Minneapolis, Minn. F 1959
- LIT, Jack (Ph.D.)
1172 E. Slocum
Philadelphia, Pa. A 1956
- LITTLE, Jack F. (Ph.D.)
8073 Earl Street
Oakland 5, Calif. A 1949
- LITTLE, Kenneth B. (Ph.D.)
Training and
Standards Branch
National Inst. of
Mental Health
Bethesda, Maryland F 1959
- LIUTKUS, Dr. Stanley
Staff House, Apt. 1
Greystone Park, N.J. A 1959
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2552 Fifth Ave.
San Diego 3, Calif. A 1949
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Veterans Administration
12227 Clifton Blvd.
Lakewood, Ohio A 1954
- LOLIS, Kathleen
Bureau of Child Guidance
362 Schermerhorn St.
Brooklyn 17, N.Y. A 1949
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Industrial Psychology Division
The Detroit Edison Company
2000 Second Avenue
Detroit 26, Mich. A 1953
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Chief Psychologist VA Hosp.
Leach Farm Road
Pittsburgh 6, Pa. A 1953
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Rua Martins Ferreira 75
Rio de Janeiro, Brazil F 1940
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Dept. of Psychiatry
Div. of Psychology
State Univ. of Iowa
Iowa City, Iowa A 1954
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1019 Gayley Ave.
Los Angeles 24, Calif. A 1951
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60 E. Scott St.
Chicago 10, Ill. A 1954
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23740 Maude Lea Circle
Novi, Michigan A 1955
- MacCASLAND, Mrs. Barbara W.
Marcy State Hospital
Marcy, N.Y. A 1957
- MacGREGOR, Dr. Robert
Univ. of Tex., Med. Branch
Galveston, Tex. A 1958
- MAGNETTE, Jules (M.D.)
Nevada State Hospital
Reno, Nevada A 1956
- MAHRER, Alvin R. (Ph.D.)
1315 S. Grape St.
Denver 22, Colo. A 1955
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of Psychology and Child
Development
Nr. Town-Hall, Ellis Bridge
Ahmedabad 6, India A 1952
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35 Church Hill,
Westmount, Montreal, Can. A 1943
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11423 E. Hallwood Drive
Fl Monte, Calif. A 1949
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215 W. 98th Street
New York 25, N. Y. F 1940
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10644 Wilshire Blvd.
Los Angeles 24, Calif. A 1950
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Montreal 29, P.Q. A 1956
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Fast Hills
Roslyn, L.I., N.Y. A 1949
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1120 22nd Ave. No.
St. Cloud, Minnesota A 1958
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Philadelphia 3, Pa. A 1951
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116 E. 68th Street
New York 21, N. Y. A 1954
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595 E. Colorado Street
Pasadena, Calif. A 1956
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University of California
Medical School
Los Angeles 24, Calif. A 1955
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254 Leggett Drive
Abilene, Tex. A 1957
- MARX, Alfred
Children's Treatment Service
Central State Hospital
Norman, Okla. A 1956
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5260 W. Chicago
Detroit 4, Mich. A 1948
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Merrill-Palmer School
71 Ferry Avenue, E.
Detroit 2, Mich. A 1949
F 1955
- MATHIAS, Rudolf (Ph.D.)
5150 Juneau Road
Madison 5, Wisc. A 1950
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Menninger Foundation
Topeka, Kansas F 1956
- *McBRIDE, Katharine E. (Ph.D.)
Bryn Mawr College
Bryn Mawr, Pa. A 1940
- McCARY, James Leslie (Ph.D.)
5101 Alameda at
Southmore
Houston, Texas A 1948
F 1956
- McCLOSKEY, Mrs. E.
5832 Corral Way
La Jolla, Calif. A 1948
- McCULLY, Robert
Payne Whitney Clinic
525 E. 68th St.
New York 21, N. Y. A 1959
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Los Angeles 18, Calif. A 1952
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VA Research Hospital
333 E. Huron Street
Chicago 11, Ill. F 1956
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Psychology Dept.
Allentown State Hospital
Allentown, Pa. A 1959
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University of Portland
Portland 3, Oregon A 1960
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U.S.P.H.S.
42 Broadway
New York 4, New York F 1951
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844 W. Lovell St. (Ph.D.)
Kalamazoo, Michigan A 1953
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2264 Fairhill Lane
San Jose, Calif. A 1941
F 1949
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5555 Hickam Drive
Dayton 31, Ohio A 1958
- MERCER, Margaret (Ph.D.)
St. Elizabeths Hospital
Washington, D.C. A 1946
F 1950
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2479 16th Avenue
San Francisco, Calif. A 1950
- *MEYER, Mortimer M. (Ph.D.)
503 N. Bronson Avenue
Los Angeles 4, Calif. A 1940
F 1949
- *MIALE, Dr. Florence R.
225 West 86th Street
New York, N. Y. F 1940
- MICHAEL, Carmen Miller
6223 Lupton
Dallas 25, Texas A 1951
F 1955
- MICHAEL-SMITH, Harold
1230 Park Avenue (Ph.D.)
New York 28, N. Y. F 1955
- MILLER, Cecil R.
10857 Wellworth Ave.
Los Angeles St. Aff. 1953
California A 1955
- MILLER, Christine (Ph.D.)
973 Keeler Avenue
Berkeley 8, Calif. A 1955
- MILSTEIN, Dr. A. Freda
17558 Prest
Detroit 35, Mich. A 1946
- MIMS, Mrs. Jean Giesey
1110 E. 32nd Street
Austin, Texas A 1943
- MINDESS, Harvey (Ph.D.)
1473 Wooster St.
Los Angeles 35, Calif. A 1953
- MINDLIN, Mrs. Dorothee F.
6408 Bannockburn Dr.
Bethesda 14, Md. A 1955
- MOLISH, Dr. Herman B.
Medical Res. Lab. Bos. 100
U. S. Sub Base
New London, Conn. A 1950
- MOORE, Mrs. Harriet Bruce
145 E. Ohio Street
Chicago 11, Ill. A 1953
- MORELAND, Mrs. Margaret E.
Kirkwood Drive
Grand Island, N. Y. A 1950
- MORF, Gustav (M.D.) (Ph.D.)
1410 Fayolle Avenue
Montreal 19, Quebec
Canada A 1954
- MORGAN, Clellen L. (Ph.D.)
R.D. No. 29, Beatty Road
Media, Pa. A 1950
- MORGAN, Olive J. (Ph.D.)
R.D. No. 29, Beatty Road
Media, Pa. A 1950
- MORIZE, Mrs. Andre
4, Rue Jean-du-Bellay
Paris 4^e, France A 1945
- MOROSON, Mrs. Gloria
110-21 73rd Road
Forest Hills, L.I., N.Y. A 1958
- MORRIS, Charles M. (Ph.D.)
73 North Second St.
Easton, Pa. A 1956
- MORRISON, Alfonso
1412 Marshall
Houston 6, Texas St. Aff. 1956
- MORROW, J. Lloyd (M.D.)
197 Passaic Avenue
Passaic, N. J. A 1943
- MOTZ, Dr. Gerald
1604 Holbrook
Ponca City, Oklahoma A 1954
- MUELLER, Adolph R. (M.D.)
1220 Washington Street
Leavenworth, Kans. A 1943
- MUENCH, George (Ph.D.)
San Jose State College
San Jose, Calif. A 1946
- MULLEN, Esther (Ph.D.)
10 Downing Street
New York 14, N. Y. A 1950
- *MUNROE, Ruth L. (Ph.D.)
239 Central Park West
New York 24, N. Y. F 1940
- MUNZ, Adam
67-30 Clyde Street
Forest Hills, L. I., N. Y. A 1955
- MURPHY, Rev. Kenneth
26 S. Center Street
Springfield, Ohio Aff. 1954
- MURPHY, Lois Barclay (Ph.D.)
Menninger Foundation
Topeka, Kans. A 1941
- MURRAY, David (Dr.)
489 N. East Avenue
Mississippi City, Miss. A 1958
- MURRAY, Henry (M.D.)
7 Divinity Avenue
Cambridge 38, Mass. A 1948
F 1950
- MURSTEIN, Dr. Bernard I.
Dept. of Psychology
Univ. of Portland A 1957
Portland 3, Oregon F 1959
- NAPOLI, Peter J. (Ed.D.)
West Shore Rd., RFD 2
Putnam Valley, N.Y. A 1949
- NEUMAN, Gerard G. (Ph.D.)
2925 Arrowood Trail
Deerfield, Illinois A 1955
- NEWMAN, Joseph (Ph.D.)
University Drive
Pittsburgh 40, Pa. A 1950
- NICHOLAS, Alma L.
200 Retreat Avenue
Hartford 2, Conn. A 1954
- NORTHCOTT, Hollie
1452 Willard St.
San Francisco 17, Calif. A 1954
- NOSAL, Walter S. (Ed.D.)
John Carroll University
Cleveland 18, Ohio A 1954
- NUNEZ, Rafael (Ph.D.)
Facultad de Filosofia
y Letras, Univ. Nacional
Autonoma de Mexico
Ciudad Universitaria A 1954
Mexico 20, D.F., Mexico F 1958
- NUTT, Frances D.
Dept. of Psych.
Michigan State Univ.
East Lansing, Mich. A 1958
- OCHROCH, Ruth (Dr.)
656 W. 162nd Street
New York 32, N. Y. A 1950
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404 Carondelet Bldg.
New Orleans 12, La. A 1949
- OLIN, Tom Davis
39 Jackson Road
Bloomfield 11, Conn. A 1956
- OLINGER, Leonard Bennett
9952 Santa Monica Blvd. (Ph.D.)
Beverly Hills, Calif. A 1954
- O'REILLY, P. Oliver,
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Dir., Psychiatric Dept.
Union Hospital
Moose Jaw
Saskatchewan, Can. A 1957
- ORGEL, Sidney A. (Ph.D.)
205 Crawford Ave.
Syracuse 3, New York A 1952
- ORR, David Hamilton (Ph.D.)
Psychological Services
Allentown State Hospital
Allentown, Pa. F 1956
- OSSORIO, Abel Garcia (Ph.D.)
Department of Psychology
Washington University
St. Louis, Mo. A 1951
- PAINTING, Donald H. (Ph.D.)
Anclote Manor
Tarpon Springs, Fla. A 1960
- PALM, Rose (Ph.D.)
263 West End Avenue
New York 23, N. Y. F 1955

- PAOLINO, Albert (Dr.)
12004 Paul Ave.
Cleveland 6, Ohio A 1958
- PARKER, Rolland S.
30 A Joralemon St.
Brooklyn 2, New York A 1957
- PARNICKY, Dr. Joseph J.
Edw. R. Johnstone Training
and Research Center
Brodertown, N.J. A 1949
- PARSONS, Rosa F.
2838 Eagle Street
San Diego 1, Calif. A 1947
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Psychology Dept. Boyce Hosp.
Station 3
Tuscaloosa, Ala. A 1956
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433 W. 21st Street
New York 11, N. Y. F 1940
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8345 Talbert Avenue
Huntington Beach, Calif. A 1950
- PEAK, Horace M.
Box 52,
Patton State Hospital,
Patton, Calif. A 1949
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317 E. 24th St.
New York 10, N.Y. A 1958
- PECKARSKY, Adeline (Ph.D.)
67 Parker Ave.
Maplewood, N.J. A 1958
- PEIXOTTO, Helen E. (Ph.D.)
Child Center
Catholic University of America
Washington, D.C. F 1955
- PENA, Cesario D. (Ph.D.)
Mental Health Institute
Box 111
Independence, Iowa A 1951
- PESEFSKY, Fred J.
Box 1131 Station B
Nashville 5, Tenn. St. Aff. 1957
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6141 Wayne Avenue
Philadelphia 44, Pa. A 1947
F 1951
- PEYMAN, Douglas A. R.
Psychology Department (Ph.D.)
Alabama State Hospital
Tuscaloosa, Ala. F 1956
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153 Fall Creek Parkway
Indianapolis 2, Ind. A 1950
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4 Andrews Road
Malvern, Pa. A 1959
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Jefferson Medical College
1025 Walnut St.
Philadelphia 7, Pa. F 1940
- PLATT, Henry (Ph.D.)
Devereux Schools
Devon, Pa. A 1950
- PLITTMAN, Jack C.
Psychology Department
Patton State Hospital
San Bernardino, Calif. A 1951
- POPPELSTONE, John
Western Michigan Univ.
Box 243
Kalamazoo, Michigan A 1958
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250 First Avenue
New York 9, N. Y. St. Aff. 1953
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McGill University
3600 McTavish Street
Montreal, P.Q., Canada A 1950
F 1953
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4911 Van Nuys Blvd.
Suite 306
Sherman Oaks, Calif. F 1957
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854 S. Euclid
Pasadena 5, Calif. A 1953
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315 W. 106th Street
New York 25, N. Y. A 1951
- PUZZO, Frank S.
130-52 232nd Street
Laurelton, N. Y. A 1949
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Department of Psychology
Michigan State University
East Lansing, Mich. F 1955
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Psychology Section
Department of Psychiatry
North Carolina
Memorial Hospital
Chapel Hill, N.C. A 1956
- RADTKE, William L.
Manatee Junior College
Bradenton, Florida A 1954
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3102 Woodhollow Drive
Chevy Chase, Maryland
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145 East Ohio Street
Chicago 11, Ill. A 1956
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Austen Riggs Center
Stockbridge, Mass. F 1940
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Los Angeles 35, Calif. A 1952
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290 Linden Lane
Merion, Pa. A 1951
F 1956
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1423 Mellon Road
Wyncote, Pa. A 1949
F 1955
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213 Midland Avenue
Wayne, Pa. A 1952
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Dept. of Psychology
Assumption College of
Windsor
Windsor, Ontario, Can. A 1954
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New York 25, N.Y. A 1959
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1075 Cragmont Avenue
Berkeley, Calif. A 1941
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College Station
Duke University
Durham, N. C. A 1948
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Pittsburgh 13, Pa. A 1943
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4937 Nagle Avenue
Sherman Oaks, Calif. A 1955
- REISS, William J. (Ph.D.)
VA Center
Kecoughtan, Va. A 1955
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22414 Clarendon
Woodland Hills, Calif. A 1953
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Pasadena 2, Calif. A 1949
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Brooklyn 25, N.Y. A 1950
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Recife
Pernambuco, Brazil A 1931
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Louisiana State University
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New Orleans 12, La. A 1942
F 1954
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Storrs, Conn. F 1940
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U. S. Naval Hospital
Philadelphia, Pa. A 1958
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Los Angeles 64, Calif. A 1949
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New York 21, N. Y. A 1940
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Cleveland 21, Ohio A 1959
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Pittsburgh 28, Pa. A 1940
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Coytesville, N.J. A 1951
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Clinical Psychologist
VA Hospital
Waco, Texas A 1957
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Child Psychiatry Division
University Hospitals
Madison, Wisc. A 1954
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299 So. Harrison St.
East Orange, N. J. A 1954
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New York 28, N.Y. St. Aff. 1954
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Calle 71-#10-53
Bogota, D.E., Colombia
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Graduate School of Education
Harvard University
Cambridge 38, Mass. F 1959
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1046 Madison Street
Denver 6, Colo. A 1949
F 1954
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State Hospital No. 1
Fulton, Mo. A 1957
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Zurich 57, Switzerland
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Los Angeles, Calif. A 1956
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Philadelphia 3, Pa. A 1945
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Grand Forks, N.D. F 1959

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Chicago 11, Ill. A 1956
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Bridgeport, Conn. A 1954
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Beverly Hills, Calif. A 1956
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Montgomery County Mental
Health Clinic
Basin & Powell Streets A 1944
Norristown, Pa. F 1949
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Cincinnati General Hospital
Cincinnati 29, Ohio F 1940
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77 West 85th St.
New York 24, N.Y. A 1958
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Veterans Adm. Hospital
Sunmount, N. Y. A 1947
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Mifflinburg, Pa. A 1947
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Beverly Hills, Calif. A 1949
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3680 Fairway Blvd.
Los Angeles 43, Calif. A 1954
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Denver 2, Colo. F 1940
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New York 11, N.Y. A 1960
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999 Mammoth Road
Manchester, N. H. A 1943
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2037 Spruce Street
Philadelphia 3, Pa. A 1950
- SALTZMAN, Sara
7012 Wilson Lane
Bethesda 14, Md. A 1950
- SALZMAN, Mrs. Anne
12548 Everglade Street
Los Angeles 66, Calif. A 1953
- SANCHEZ-GARCIA, Dr. Jose
Casilla de Correos 57
Miraflores, Lima, Peru A 1959
- SANDER, Emilie T.
657 W. 161st Street
New York, N. Y. A 1950
- SANDERS, David H.
1479 Dahill Road
Brooklyn 4, N.Y. St. Aff. 1960
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1823 34th Avenue
San Francisco 22, Calif. A 1952
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Vassar College
Poughkeepsie, N.Y. F 1959
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Yale University
333 Cedar Street
New Haven, Conn. A 1944
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New Haven, Conn. A 1944
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Topeka, Kans. F 1950
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New York 14, N.Y. A 1955
- SCHACHT, Mrs. Leatrice Styrt
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New Rochelle, N. Y. A 1950
- SCHACHTEL, Ernest G.
299 Riverside Drive
New York 25, N. Y. F 1951
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New York 25, N. Y. A 1953
- SCHAFER, Roy (Ph.D.)
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New Haven, Conn. F 1955
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Byron Harless and
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420 W. Lafayette Street
Tampa, Fla. A 1956
- SCHANBERGER, William J.
305 Veri Avenue
Pittsburgh 20, Pa. A 1954
- SCHATTMAN, Mrs. Esther
Preger
210 E. 68th Street
New York 21, N. Y. A 1950
- SCHAW, Louis C.
Mass. Inst. of Technology
Center for Intl. Studies
50 Memorial Drive
Cambridge 39, Mass. A 1959
- SCHER, Sam C. (Ph.D.)
1668 Portland Avenue
St. Paul 4, Minn. A 1956
- SCHERER, I. W. (Ph.D.)
Veterans Administration
Northampton, Mass. A 1949
- SCHILLINGER, Mrs. Beverly
Goodman
915 West End Ave., Apt. 50
New York 25, N.Y. A 1956
- SCHILLINGER, Morton
441 West End Avenue
New York 24, N. Y. A 1953
- *SCHLESINGER, Mrs. Alicia de
Solis 155, VIII/A A 1940
Buenos Aires, Argentina
- SCHMALZRIED, Newell T.
(Ph.D.)
412 S. Boots St.
Marion, Ind. A 1956
- SCHMIDL, Fritz (M.S., Dr. Jur.)
6036 Upland Terrace A 1942
Seattle 18, Wash. F 1945
- SCHNEIDER, Stanley F. (Ph.D.)
Neuropsychiatric Institute
University Hospital
Ann Arbor, Mich. A 1954
- SCHOENHORN, Miss Elizabeth
Rengasse 4
Vienna, Austria
- SCHON, Martha (Ph.D.)
853 Riverside Drive
New York 32, N.Y. A 1959
- SCHONBAR, Rosalea Ann
(Ph.D.)
30 W. 60th St., Apt. 10H
New York 23, N.Y. A 1943
- SCHUBERT, Herman J. P.
(Ph.D.)
Route 2
500 Klein Road
Buffalo 21, N.Y. A 1950
- SCHULMAN, Doris
10 Downing Street
New York 14, N. Y. A 1948
- SCHULMAN, Irving (Ph.D.)
638 Harvard Road
Cynwyd, Pa. A 1952
- SCHUMACHER, Audrey Sims
2257 Northwest 11th Ave.
Gainesville, Fla. F 1949
- SCHUMACHER, Henry C.
(M.D.)
2257 Northwest 11th Ave.
Gainesville, Fla. A 1941
- SCHWARTZ, Arthur A.
251 Central Park West
New York 24, N. Y. A 1951
- SCHWARTZ, Emanuel K.
12 E. 87th St. (Ph.D., D.S. Sc.)
New York 28 A 1949
New York F 1952
- SCHWERIN, Mrs. Erna
P. O. Box 105
Lima, Ohio A 1950
- SCOTT, Edward M. (Ph.D.)
2905 N.E. 37th St.
Portland, Oregon
- SEIDENFELD, Morton A. (Ph.D.)
National Foundation for
Infantile Paralysis
301 East 42nd St. A 1944
New York 17, N.Y. F 1954
- SEILER, Mrs. Geraldine F.
1120 Oakland Drive A 1946
Mount Dora, Florida F 1950
- SEITZMAN, Daniel
2387 Ocean Avenue
Brooklyn 29, N. Y. A 1949
- SELIG, Kalman (Ph.D.)
188 Clinton Avenue
Newark 8, N.J. A 1950
- SELZER, Samuel (Ph.D.)
Box 65
Sonyea, N.Y. A 1954
- SELZER, Samuel (Ph.D.)
Minnesota Mental Health
Center
Albert Lea, Minn. A 1956
- SHACKETTE, Mrs. Sarah Eyre
Box 166
Carmel Valley, Calif. A 1942
- SHAH, Saleem A. (Ph. D.)
1030 Kent Avenue
Catonsville 28, Maryland A 1958
- SHAPIRO, David (Ph.D.)
Austen Riggs Foundation
Stockbridge, Mass. A 1950
- SHARPE, Susie McMillan (Ph.D.)
46 W. 4th Street
Mt. Vernon, N. Y. A 1948
- SHATTER, Florence (Ph.D.)
103 Maple St.
Great Neck, N.Y. A 1957
- SHEEHAN, Joseph (Ph.D.)
416 - 21 Place
Santa Monica, Calif. A 1952
- SHERMAN, Murray H. (Ph.D.)
350 Central Park West
New York 25, N.Y. A 1956
- SHIPMAN, William G. (Ph.D.)
3601 Fifth Avenue
Pittsburgh 13, Pa. A 1956
- SHNEIDMAN, Edwin S. (Ph.D.)
11431 Kingsland Avenue A 1949
Los Angeles 66, Calif. F 1951
- SHOBEN, Edward J., Jr. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. A 1952
- SHOR, Joel (Ph.D.)
121 East 94th Street
New York 28, N. Y. A 1945

- SHULMAN, Harold S. (Ph.D.)
Mental Health Clinic
501 E. Springfield Ave.
Champaign, Ill. A 1957
- SIEGEL, Edward L. (Ph.D.)
368 Bruce St.
Syracuse 3, New York A 1950
- SIEGEL, Joseph H. (Ph.D.)
11330 Hillcrest Road
Dallas 30, Texas A 1956
- SIEGEL, Max (Ph.D.)
50 Kenilworth Place A 1949
Brooklyn 10, N.Y. F 1956
- SIEGEL, Miriam G. (Ph.D.)
57 E. 90th Street A 1942
New York 28, N. Y. F 1949
- SILVERMAN, Lloyd (Ph.D.)
680 West End Avenue A 1960
New York 25, N.Y.
- SILVERSTEIN, Mrs. Sophie M.
2301 Kings Highway
Brooklyn 29, N.Y. St. Aff. 1956
- SIMKIN, James S. (Ph.D.)
435 No. Bedford Drive
Beverly Hills, Calif. A 1952
- SIMKINS, Lawrence
Florida State Univ.
Department of Psychology
Tallahassee, Fla. St. Aff. 1958
- SIMON, Maria D. (Ph.D.)
University of Arkansas
Medical Center,
Little Rock, Ark. A 1959
- SINGER, Erwin (Ph.D.)
33 Dunham Road
Hartsdale, New York F 1959
- SINGER, Roland H.
7895 Mark Dr.
Verona, Pa. A 1953
- SISSON, Boyd D. (Ph.D.)
2237 Darlington Dr.
Forest Acres,
Augusta, Ga. F 1957
- SKEELS, Dell
Humanistic-Social Department
University of Washington
Seattle 15, Wash. Aff. 1954
- SLESS, Bernard
225 Upland Road
Merion, Pa. A 1952
- SMITH, Frances (Ph.D.)
7155 E. Wardlow Road
Long Beach 8, Calif. A 1955
- SMITH, James Innes
"Craighead"
West Fenton, North Berwick
East Lothian, Scotland A 1959
- SMITH, Mrs. Margaret J.
Wisconsin Diagnostic Center
1552 University Avenue
Madison, Wis. A 1950
- SMOLINSKY, Harold J. (Ph.D.)
Wernersville State Hospital
Wernersville, Pa. A 1952
- SNOWDEN, Robert F.
595 East Colorado St.
Pasadena, Calif. A 1953
- SOBOL, Albert L. (Ph.D.)
308 Betsy Brown Road A 1949
Port Chester, N.Y. F 1954
- SOMERVILLE, Addison W.
5439 So. Greenwood Ave.
Chicago 15, Illinois A 1956
- SOMMERS, Vita Stein (Ph.D.)
931 So. Windsor Blvd.
Los Angeles 19, Calif. A 1946
- SOSNOFF, Mrs. Miriam
1895 Grand Concourse
New York 53, N. Y. St. Aff. 1953
A 1955
- SPANEY, Emma (Ph.D.)
Queens College
Flushing 67, N. Y. A 1949
- SPENCER, Mrs. Betty L.
1912 18th Street
Huntington, W. Va. A 1951
- SPIEGELMAN, J. Marvin (Ph.D.)
420 North Camden Drive
Beverly Hills, Calif. A 1953
- SPIN, Mrs. Lillian
500 E. 56th Street
Brooklyn 3, N. Y. A 1950
- SPINDLER, Mrs. Joan Elizabeth
1400 Wesmar Drive
Alta Vista
Ottawa, Ont., Can. A 1948
- SPIRER, Dr. Jess
Box 8186, Univ. Guidance
Center
Univ. of Miami
Coral Gables, Fla. F 1958
- SPIRES, Alan M. (Ph.D.)
Provincial Hospital
Saint John, N.B., Can. A 1954
- SPRINGER, Florence E.
370 W. 255th Street
Box 71
Bronx, N.Y.
- STANFORD, Dr. Margaret J.
Sonoma State Hospital
Eldridge, Calif. A 1950
- STANTON, Mrs. Harriet
15 Livermore Road A 1942
Wellesley Hills 82, Mass.
- STAVRIANOS, Mrs. Bertha
823 Ingleside Place
Evanston, Ill. A 1943
- STEEN, Thomas W. (Ph.D.)
11153 Rosarita Drive
Loma Linda, Calif. A 1954
- STEIN, Morris I. (Ph.D.)
5737 South Drexel Avenue
Chicago, Illinois F 1959
- STEINER, Matilda E.
220 Brookdale Avenue
Newark 6, N. J. A 1943
F 1946
- STEINER, Meta (Ph.D.)
40-70 Hampton Street
Elmhurst 73, N. Y. A 1948
F 1950
- STEINZOR, Bernard (Ph.D.)
49 W. 96th Street
New York 25, N. Y. A 1943
- STEISEL, Ira M. (Ph.D.)
The Childrens Unit
Eastern Pa. Psychiatric Instit.
Henry Ave. & Abbottsford
Rd., Phila. 29, Pa. A 1951
- STENDEL, Mrs. Kathleen
Glendon-Westwood Med. Bldg.
1250 Glendon Avenue
Los Angeles 24, Calif. A 1950
- STERN, Mrs. Kathryn Werner
348 East 18th St.
New York 3, N.Y. A 1952
- STERNBERG, David
3130 Brighton 7th Street
Brooklyn 35, N. Y. St. Aff. 1955
- STERNE, Spencer B.
R.R. No. 1, Box 29
Iona, California A 1953
- STEWART, Barbara M. (Ph.D.)
267 S. New Hampshire
Los Angeles 4, Calif. A 1949
- STIRLING, Miss Elizabeth
2024 R. Street, N.W.
Washington 9, D.C. St. Aff. 1960
- STONE, Harold (Ph.D.)
531 La Cienega Blvd., Rm. 208
Los Angeles 48, Calif. A 1956
- STONE, Irving R.
State Mental Hygiene Clinic
3525 Fourth Avenue
San Diego 3, Calif. A 1951
- *STONE, L. Joseph (Ph.D.)
Vassar College A 1940
Poughkeepsie, N. Y. F 1951
- STONESIFER, Fred A. (Ph.D.)
State Board of Health
Dover, Dela. A 1951
- STOOPS, Mrs. Wanda Rah
3258 N. New Jersey Street
Indianapolis 5, Ind. A 1949
- STOTZ, Marion
340 W. Enid Drive
Key Biscayna
Miami 49, Fla. A 1953
- STRAIT, Bennett
509 Scott Street
Stroudsburg, Pa. A 1950
- STRAUSS, Mrs. Elsa L.
3819 Dakota Street
Cincinnati, Ohio A 1951
- STRUTHERS, Alice Ball (Ph.D.)
2501 Palos Verdes Drive, N.
Palos Verdes Estates
California A 1949
- SULZER, Edward S.
309 Stonecrest Drive
St. Aff. 1954
De Witt 14, N.Y. A 1958
- SWIFT, Joan Woodcock (Ph.D.)
5628 S. Blackstone Avenue
Chicago 37, Ill. A 1945
- SYMONDS, Percival M. (Ph.D.)
106 Morningside Drive A 1950
New York 27, N.Y. F 1951
- TADA, Dr. Harou
2-26 Ikeda-machi
Kanazawa-shi
Ishikawa-ken, Japan
- TALLENT, Norman (Ph.D.)
VA Hospital
Northampton, Mass. A 1953
- TANAKA, Mr. Fujio
3-7 Ishizakakakuba
Kanazawa, Shi
Ishikawa-ken, Japan A 1959
- TAULBEE, Earl S. (Ph.D.)
Veterans Adm. Hospital A 1953
Lincoln, Nebraska F 1955
- TAYAL, Shanti
71 Ferry Avenue East,
Detroit 2, Mich. A 1960
- TAYLOR, Mrs. Verda
905 East King St.
Lancaster, Pa. A 1950
- *TEICH, Mrs. Marianne
2040 McGraw Avenue
Bronx 62, N. Y. A 1940
- TEICHER, Arthur, Dr.
215 West 88th St.
New York 24, N.Y.
- TEMERLIN, Maurice K.
Guidance Service (Ph.D.)
University of Oklahoma
Norman, Okla. A 1956
- TENNEY, Edward Vernon
(Ph.D.)
735 East Holland Ave.
Fresno 4, Calif. A 1948
- THETFORD, William N.
9 E. 78th St. (Ph.D.)
New York 21, N.Y. F 1957
- THORNTON, Thomas E.
(Ph.D.)
Route 1, Box 489
Waukegan, Illinois A 1959
- TOLMACH, Mrs. Regina E.
16 W. 77th Street
New York 24, N. Y. A 1949
- TOMBLEN, Donald (Ph.D.)
V.A. Hospital
East Orange, N.J. A 1956

- TOMKINS, Sylvan S. (M.D.)
Princeton University
36 College Road
Princeton, New Jersey
- TOPPING, Marion Powers
(Mrs. Robert C.)
122 East 22nd Street
New York 10, N.Y. A 1948
- TOWNSEND, Mrs. Marjorie M.
Plainfield, Vt. A 1949
- TRACHTMAN, Gilbert M.
(Ph.D.)
2941 Carlyle Road
Wantagh, L.I., N.Y. A 1954
- TREAT, Wolcott C. (Ph.D.)
5027 Campanile Drive
San Diego 15, Calif. A 1953
- TRIPP, Clarence A. (Dr.)
The Handwriting Inst.
18 E. 48th St.
New York 17, N.Y. A 1956
- TROUP, Evelyn (Ph.D.)
12890 Sunset Blvd.
Los Angeles 49, Calif. F 1949
- *TUFT, Carolyn M. (Ph.D.)
4613 Larchwood Avenue
Philadelphia, Pa. A 1940
- ULLMANN, Dr. Leonard P.
VA Hospital
Palo Alto, Calif. A 1958
- UMPIERRE, Francisco Jose, Dr.
Department of Health
Stop 51, Roosevelt
Hato Rey, P.R. St. Aff. 1956
- VACCARO, J. John (Ph.D.)
105-34 63rd Avenue
Forest Hills 75, N. Y. F 1955
- VAN ALSTYNE, Dorothy
606 Canal Road
Sarasota, Florida (Ph.D.) A 1949
- VANDENBERG, Steven G.
(Ph. D.)
Mental Health Res. Inst.
Univ. of Michigan
Ann Arbor, Michigan A 1951
- VAN WEST, Mrs. Joan
424 E. 14th St., Apt. 3 C
New York 9, N.Y. St. Aff. 1954
- VAYHINGER, Dr. John M.
Dept. of Pastoral Psych.
and Counseling
Garrett Biblical Inst.
Northwestern Univ. Campus
Evanston, Illinois A 1952
- VERRILL, Bernard (Ph.D.)
Department of Psychology
Bradley University
Peoria, Ill. A 1958
- VINSON, David (Ph.D.)
1210 Medical Towers
Houston 25, Texas A 1949
- VOGEL, Horst (Dr.)
Psychosomatische Klinik
Univ. of Heidelberg
Vobstrasse 2, Germany A 1957
- VORHAUS, David
27 W. 86th Street
New York 24, N. Y. H. M. 1954
- VORHAUS, Pauline G. (Ed.D.)
27 W. 86th Street
New York 24, N. Y. A 1941
F 1944
- WAGNER, Mazie Earle (Ph.D.)
Route 2
500 Klein Road
Buffalo 21, N.Y. A 1950
- WALTON, Mrs. Norma R.
930 Dart Road, Rt. 3
Mason, Michigan A 1949
- WARNER, Samuel J. (Ph.D.)
200 East 16th Street
New York 3, N.Y. A 1953
- WARREN, Lurene Z.
Mt. Pleasant State Home &
Training School
Mt. Pleasant, Mich. A 1949
- WARSHAWSKY, Mrs. Florence
2889 Torrington Road
Shaker Heights 22, Ohio A 1949
- WATERS, Thomas J.
812 S. Edgewood
Columbia, Mo. St. Aff. 1955
- WATKINS, Roberta Frank
533 San Marino
San Marino, Calif. St. Aff. 1955
- WEINSTEIN, Dr. Marvin S.
1837 E. Medlock Drive
Phoenix, Arizona A 1958
- WEIR, John R. (Ph.D.)
2841 Highview Avenue
Altadena, Calif. A 1954
- WEISS, Bertram A. (Ph.D.)
VA Hospital
Alexandria, La. A 1956
- WEISS, Emalyn R.
733 N. 3rd Street
Reading, Pa. A 1950
- WEISS, Herman R. (Ph.D.)
1277 E. 48th Street
Brooklyn 34, N. Y. A 1953
- WEISS, Sheldon W. (Ph.D.)
604 Clearview Ave.
Wychill
Wilmington 3, Dela. A 1951
- WEISSKOPF-JOELSON, Edith
Dept. of Psychology (Ph.D.)
Purchase University
Lafayette, Ind. F 1951
- WELLS, Frederick Lyman (Ph.D.)
87 School Street
Belmont 78, Mass. H.M. 1950
- WENGATE, Pauline (Ph.D.)
2321 Crescent Avenue
Charlotte 7, N.C. A 1950
- WENTWORTH-ROHR, Ivan
Penthouse B
51 Fifth Avenue
New York 3, N.Y. A 1950
- WERNER, Mr. Henry Clay
204 Eighth Ave.
New York 11, N.Y. A 1958
- WERTHEIMER, Rita (Ph.D.)
33 Van Wart Avenue
White Plains, N.Y. A 1955
- WEXLER, Rochelle M.
Apt. 6 D
130 Pelham Road
New Rochelle, N.Y. A 1949
- WHITE, Mrs. Helen Cecelia
1025 Worsham Drive
Whittier, Calif. A 1950
- WHITMAN, Mrs. Dorothy
3905 Winding Way
Cincinnati 29, Ohio St. Aff. 1956
- WHITMAN, Roy M. (M.D.)
3905 Winding Way
Cincinnati 29, Ohio A 1954
- WHITSELL, Leon J. (M.D.)
52 Shore View Avenue
San Francisco 21, Calif. A 1942
- WICKERSHAM, Francis (Ph.D.)
U.S.P.H.S.H.
Fort Worth, Texas A 1952
- WIGDOR, Blossom T. (Ph.D.)
4552 Lacombe Avenue
Montreal 26, Quebec, A 1949
Canada F 1956
- WILCOTT, Johanna Becker
(Ph.D.)
Nebraska Psychiatric Inst.
6025 44th St.
Omaha 5, Nebraska
- WILDE, Dr. Guido
Apartado Aereo 6651
Bogota, Colombia, S.A. A 1955
- WILENSKY, Harold (Ph.D.)
18 Essex Place
Hartsdale, New York A 1960
- WILKINS, Mrs. Verna M.
Mother Goose Nursery School
9500 Warren Street
Silver Springs, Md. A 1950
- WILLIAMS, Gertha (Ph.D.)
17211 Buckingham Dr.
Birmingham, Mich. F 1949
- WILLIAMS, Helen E. (Ed.D.)
210 W. 70th Street
New York 23, N. Y. A 1950
- WILLIAMS, Mrs. Jessie M.
Griffins
Abinger Hammer
Nr. Dorking, England A 1950
- WILLIAMSON, Miss Margaret O.
350 Richmond Terrace
Staten Island 1, N.Y. A 1945
- WILSON, Helen Elizabeth
State Mental Hygiene Clinic
1500 North 305
Billings, Mont. S.A. 1958
- WILSON, Mary T.
R.D. 1
South Salem, N.Y. A 1944
- WINER, Harold R. (Ph.D.)
8215 Westchester Drive
Dallas 25, Texas A 1956
- WITZEMAN, S. Evangeline
5021 Hawkins Road
West Richfield, Ohio (Ph.D.) A 1952
- WOLF, S. Jean (Ph.D.)
220 Fifth Avenue
New York 1, N. Y. A 1944
- *WOLFSON, Mrs. Ruth
124 W. 79th Street
New York 24, N. Y. F 1940
- WOLPE, Zelta S. (Ph.D.)
435 North Bedford Drive
Beverly Hills, Calif. A 1960
- WOLTMANN, Adolf G.
1364 Lexington Ave.
New York 28, N. Y. A 1949
- WOOD, Austin B. (Ph.D.)
810 E. 19th Street
Brooklyn 30, N. Y. A 1943
- WOOLF, Henrietta K.
3345 Dent Place, N.W.
Washington 7, D.C. A 1950
- WRAY, Beulah K. (Ed.D.)
40 E. 10th Street
New York 3, N. Y. A 1949
- WRIGHT, M. Erik (M.D.)
Department of Psychology
University of Kansas
Lawrence, Kans. A 1943
- WRIGHT, Morgan
Medical Arts Clinic
Regina, Saskatchewan, Can. A 1955
- WYATT, Frederick (Ph.D.)
1027 E. Union Street
Norfolk, Neb. A 1948
A 1957
- WYLIE, Alexander
Box 902
Norfolk State Hosp. St. Aff. 1956
Ann Arbor, Mich. F 1949
- YADOFF, Bernard
5651 Munhall Road
Pittsburgh 17, Pa. A 1958
- YANG, Andrew T. (Ph.D.)
106 Eileen Drive
Pontiac, Michigan A 1957
- ZACHMANN, Mrs. Esther
Apartado Aereo 40-84 St. Aff. 1956
Bogota, Colombia, S.A.

ZEEV, Bracha
333 McDonald Ave.
Brooklyn, N.Y. A 1959
ZEICHNER, Abraham M. (Ph.D.)
57 Northside Road
North Haven, Conn. F 1955

ZIERER, Ernest (Ph.D.)
42-05 Lavton Street
Elmhurst, L. I., N. Y. A 1952
ZIMET, Carl N. (Ph.D.)
333 Cedar Street
New Haven, Conn A 1959

ZIMMERMAN, Irla Lee (Ph.D.)
8536 Saturn Street
Los Angeles 35, Calif. A 1949
ZUCKER, Luise J. (Ph.D.)
276 Riverside Drive
New York 25, N. Y. A 1945
F 1950

GEOGRAPHICAL DIRECTORY OF MEMBERSHIP OF THE SOCIETY FOR PROJECTIVE TECHNIQUES UNITED STATES AND TERRITORIES

ALABAMA

Tuscaloosa
Paul, Waters C.
Peyman, Douglas A. R.

ARIZONA

Phoenix
Canter, Aaron H.
Iverson, Norman
Katz, Harriet
Weinstein, Marvin

ARKANSAS

Himmelstein, Philip
Simon, Maria D.

CALIFORNIA

Bergstrom-Borland, Ingrid
Bowdlear, Charles
Bradway, Katherine
Cassel, Russell
Cole, Joseph
Crile, Mary
De Vault, Helen C.
Dunlap, Dorothy
Evans, Ray B.
Everett, Evelyn G.
Gering, Evelyn
Klopfer, Bruno
Lebowitz, Anne
Lewis, Robert T.
McCloskey, Mrs. E.
Payne, David H.
Peak, Horace M.
Plittman, Jack C.
Shackette, Sarah
Smith, Frances
Steen, Thomas
Sterne, Spencer
Tenney, Edward V.
Watkins, Roberta F.
White, Helen Cecelia

Alladena

Brozovich, Stanley M.

Weir, John R.

Berkeley

Bell, John E.
DeVos, George
Inman, John M.
Miller, Christine
Reichard, Suzanne

Beverly Hills

Brandt, Rudolph J.
Joel, Walther
Johnson, Theresa
Lawrence, Ernest
Olinger, Leonard
Ross, Harvey
Ruja, David H.
Simkin, James S.
Spiegelman, J. Marvin
Wolpe, Zelda S.

El Monte

Ericson, Helen
Malm, Mildred

Eldridge

Davison, Arthur H.
Stanford, Margaret

Los Angeles

Armon, Mary Virginia
Beale, Elizabeth

Bissiri, Gerald
Bolgar, Hedda
Buhler, Charlotte
Centers, Louise
Crumpton, Evelyn
Dryselius, Harold
Eiduson, Bernice T.
Eisner, Betty G.
Enochs, Neil
Farberow, Norman L.
Feifel, Herman
Fichman, Lionel
Forer, Bertram R.
Forer, Lucille K.
Frostig, Marianne
Goldstein, Fred
Grayson, Harry
Hays, Berta
Hooker, Evelyn
Howard, Stephen J.
Knapp, Pearl G.
Lakin, Harriet A.
Levy, Harry
Lucas, Winifred
Manson, Morse P.
Marsh, James
McDonald, Franklin R.
Meyer, Mortimer M.
Miller, Cecil R.
Mindess, Harvey
Rapkin, Maurice
Risch, Frank
Rose, Nicholas
Russell, Howard
Salzman, Anne
Shneidman, Edwin S.
Sommers, Vita Stein
Stendel, Kathleen
Stewart, Barbara M.
Stone, Harold
Troup, Evelyn
Zimmerman, Irla Lee

Oakland

Duc, Floyd O.
Elliott, Merle H.
Little, Jack F.

Palo Alto

Krasner, Leonard
Ullmann, Leonard

Palos Verdes Estates

Holt, James
Struthers, Alice Ball

Pasadena

Diamond, Florence
Korda, Geraldine J.
Marsh, Donald
Price, Marian
Reitzell, Jeanne M.
Snowden, Robert F.

San Diego

Davenport, Beverly
Heisler, Verda
Lockwood, Wallace V.
Parsons, Rosa F.
Stone, Irving R.
Treat, Wolcott C.

San Francisco

Berliner, Hildegard
Frankel, Esther
Harris, Robert E.
Kalis, Betty Lee
Korner, Annelise F.
Meyer, George

Northcott, Hollie
Sanderson, Herbert
Whitsell, Leon

San Jose

Burton, Arthur
Levy, Ruth J.
Mehr, Helen Margulies
Muench, George

Santa Barbara

Clapp, Hazel S.
Dunn, Michael B.

Santa Monica

Baker, Gertrude
Sheehan, Joseph

Sherman Oaks

Pottharst, Karl
Reisel, Jerome

Woodland Hills

Cartwright, Robert W.
Reitz, Edna M.

COLORADO

Denver

Billings, Edward G.
Fehrenbach, Alice R.
Kahn, Marvin
Mahler, Alvin
Rogers, Lawrence S.
Rymer, Charles A.

CONNECTICUT

Barbara, Peter Paul
Holmes, Frances B.
Holzberg, Jules D.
Molish, Herman
Nicholas, Alma L.
Olin, Tom Davis
Rickers-Ovsiankina, Maria
Zeichner, Abraham

Bridgeport

Fine, Harold J.
Hemmendinger, Larry
Rosner, Stanley

New Haven

Ames, Louise Bates
Hellersberg, Elizabeth
Klatskin, Ethelyn H.
Sarason, Esther K.
Sarason, Seymour B.
Schafer, Roy
Zimet, Carl N.

DELAWARE

Holanchock, George
Stonesifer, Fred

Wilmington

Blessing, Harold D.
Grossman, Searles
Weiss, Sheldon

FLORIDA

Brodie, Dorothy B.
Flemming, Edward
Radtko, William
Seiler, Geraldine
Simkins, Lawrence

Coral Gables

Chavkin, Albert
Lesser, Erwin
Spirer, Jess

Gainesville

Harlow, Justin
Schumaker, Audrey S.
Schumaker, Henry C.

Miami

Allen, Robert M.
Karson, Samuel
Kushner, Malcolm
Stotz, Marion

Sarasota

Kelsey, Howard
Van Alstyne, Dorothy

Tampa

Blau, Theo.
Schaffer, Robert E.

Tarpon Springs

Gibson, Robert L.
Painting, Donald H.

GEORGIA

Hughes, Robert M.
Kaplan, Norman
Sisson, Boyd

HAWAII

Halperin, Sidney I

ILLINOIS

Barrell, Robt. P.
Klass, Walter K.
Leiden, Irving
Neuman, Gerald G.
Shulman, Harold
Thornton, Thomas E.
Verrill, Bernard

Chicago

Altman, Charlotte H.
Beck, Samuel J.
Bernstein, Hilde R.
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HELEN SARGENT

HELEN DURHAM SARGENT¹

Helen Sargent was not only a distinguished scientist who will be mourned by her colleagues in psychology, but also a remarkable human being who surmounted physical handicaps of the most limiting kind and carried out a rich and brilliant career full of friendship, wit and charm beyond the aspirations of the most fortunate. It is therefore fitting that her life be recorded as a symbol of humanity at its finest at the same time that appreciation is expressed of her many important and lasting contributions to the science and clinical practice of psychology.

If the life of Helen Sargent is ever to be adequately written, it must combine the objectivity of a rich and solid scientific memoir with an expression of the devoted, loving and revering quality which characterized the feelings of those around her. This brief notice can succeed in neither respect. It must primarily emphasize her achievements as a psychologist, but must somehow at the same time convey a sense of the resolution and heroism with which her life was lived.

Born on Christmas Day, 1904, she was crippled by disease so early that she had no memory of a life outside of her wheel chair. Her mother and Helen herself assumed that life was to be normal, full of intellectual, social, and personal warmth and fulfillment. As a child she showed the humor and gaiety that characterized her whole life; and even the "deviltry" of a practical joker. Her characteristic fortitude was demonstrated when she had only just begun to talk — about two years old — in an incident with a bonnet which was for some reason pinned at the side. Helen is reported to have said quite matter-of-factly, "I

don't like that pin in my ear." Her mother found that she had pinned it right through the little ear lobe, and was manifestly more upset than Helen appeared to be.

She did not attend school until the eighth or ninth grade, but was taught by a governess who had all she could do to cope with the high spirited little girl who preferred electric trains, Erector sets and rocking horse to the three R's. This fascination with gadgets persisted throughout her life, as did the excitement and pleasure that she took in new people, new things, new possibilities, new viewpoints, which gave her life that openness and freshness so characteristic of the enduringly young.

When her academic interests were kindled, she displayed the same verve which so enlivened her non-academic pursuits. It is said that the first time she really began to use her amazing mind was in college, when she decided that the best contribution she could make to her sorority was a good grade average. She not only earned a Phi Beta Kappa key, but in the process of doing so established a record for her chapter. She drove hard in the fulfillment of her intellectual ambitions, achieving her Bachelor's, Master's and Doctoral degrees at Northwestern University, where she was invited to stay on as an instructor.

Not only did she make many warm and enduring friendships with fellow students, but she is remembered by many now-prominent alumni of that department as an exceptional teacher and researcher whose personal characteristics contributed much to her excellence. Her course in the psychotherapies is still discussed as a high point in graduate teaching of psychology. While teaching at Northwestern she contributed to many clinical services in Evanston and nearby institu-

¹ Great assistance in preparing this notice was given by Dr. Gardner Murphy, Dr. Herbert J. Schlesinger, and Dr. Robert S. Wallerstein of The Menninger Foundation.

tions, and engaged in private practice and research.

From the first, she showed the brilliance which marked the entire course of her professional career. Her doctoral dissertation, undertaken to show that it was possible to develop a sensitive, penetrating paper-and-pencil projective test, was called by publisher Dashiell "a brave venture into No Man's Land." And her review of the scientific foundations and scope of projective test theory still ranks among the major contributions to the projective techniques literature. Her views on the application of projective techniques to clinical problems appeared in their most mature form some years later with the publication of her *Insight Test*, a book which may be read with profit even by those not primarily concerned with the test itself, for the richness of its reflections and the formulations she offers as guides to the psychoanalytically-oriented diagnostician. Her thoughts on the applicability of psychoanalytic ego psychology to problems of diagnosis and research achieves, in this book, the programmatic breadth which found expression in her subsequent research career:

"The shift in focus from libido to ego psychology, from drive and complex to thought process, has meant for psychological testing a new rationale which highlights individual organization as against the universal principles of pioneer psychoanalysis. In test products, as in any samples of behavior or verbalization, the common denominators of instinct, drive, or need and their vicissitudes may be identified: Oedipus complex, castration anxiety, masturbatory guilt, aggression and passivity, sexuality in its crude and general forms. Although the starkness of their intrusion in expressive acts tells something of the stage of siege in which a personality is found, the mere appearance of such dynamic determinants says little except that the person who expresses them, directly or symbolically, is a human being. The particular development, organization, or collapse, in a given person, of psychic and constitutional structures for the inhibition, channelization, control, and direction of basic energy and the search for gratification in an environment of

objects, object relationships, social denials and incentives, common to all, yet individualized by circumstance, would seem to be the most important subject of investigation." (p. 15)

In 1948 she came to the newly established Winter Veterans Administration Hospital in Topeka, Kansas, where as chief psychologist of the department which gave practicum training to interns in the combined Menninger Foundation-University of Kansas-Winter VA Hospital Psychology Training Program, she was held in affection and respect as clinical model for over fifty outstanding young trainees. She represented for them the best kind of eclecticism—a youthful enthusiasm, interest, and dedication to clinical pursuits which left her free to admire, without parochialism, psychoanalytic theory on the one hand and Carl Rogers' contributions on the other. Hers was a wisdom which enabled her consistently to view problems in their larger perspective, free of polemics, but tirelessly patient in showing new conceptual links or opening up new courses of action where none before seemed to exist.

She used to pride herself on recognizing in their earliest stages important new developments in clinical psychology, and it was this excitement of hers with newness which got across to many of her trainees. Her eagerness to share in the healthy growth of the profession also, at times, overshot the mark in characteristically admirable ways, such as when she envisioned, phoenix-like, an ideal graduate program for clinical psychology at a time when she was faced with the imminent dissolution of the particular training program in which so much of herself was invested. It was the growth of her students that mattered. Her investment was always in growth—the growth of students; the discovery of new clinical tools; the development of projective test theories; the development of clinical research methodology.

In her work, as in so many other

areas of her life, she would often as a matter of course create the means to important ends. She was as enthusiastic over an ingenious photographic process she developed in her own dark room as she was with her application of traditional psychophysical methods to new clinical research problems.

But always, her search for newness was harnessed to a well-developed sense of scientific discipline. It was characteristic of her that, in introducing her test in print, she could, with rare restraint, "look first beyond the more immediate problem of test use and interpretation and into the dimmer territory of issues in diagnostic research and nosology." It was this concern with the diagnostic, therapeutic and research study of disturbed ego functioning which led her, in 1953, to leave Winter Hospital in order to associate herself with the research program of The Menninger Foundation. In this position she functioned in a wide range of research activities. She assisted Dr. Karl Menninger in developing the concepts of a scientific psychological examination that were incorporated into his book on the psychiatric case study. She served as psychological consultant to the Kansas Rehabilitation Center for the Blind, where she introduced the use of her Insight Test as a projective technique uniquely adapted to work with the blind (with its reliance on the auditory rather than the visual modality for the presentation of its stimuli), and where she also helped bring psychodynamic insights into the educational and rehabilitative activities of this training center. She worked as an integral part of a research project at the Southard School of The Menninger Foundation, a research into the psychology and the psychotherapy of borderline and psychotic children. For this project she functioned broadly as a methodologist and research strategist and at the same time more concentratedly as research tactician carrying out test-retest comparisons, assessing changing ego

organizations.

Her main work during her last years was with the Psychotherapy Research Project, a large-scale and comprehensive effort to study the changes that take place in psychoanalytic psychotherapy and the way in which these changes come about. In this large project with some twenty co-workers, programmed over a ten-year span, Helen Sargent played a central and indispensable role. She was chiefly responsible for devising the research method and strategy for the entire project. She was guided by a firm conviction that the complex clinical operations of psychoanalytic therapy could be subjected to systematic research inquiry, to confirmation by rigorous and carefully specified prediction, and even to specially adapted varieties of quantitative analysis, without doing violence to the spirit or the data of the clinical psychoanalytic conception. She wrote the paper which elaborated and documented this viewpoint, and which became the chief methodological justification of the project. Within its framework she made a series of specific contributions to the methods, the instruments, and the procedures of the project, of such quality as leave no doubt that she was here realizing the consummation of a brilliant professional life.²

Amazingly, during these same years, this frail but tireless person found time for a variety of outside professional interests. She performed many important functions for the Division of Clinical Psychology of the American Psychological Association between 1951 and 1958, and served as Secretary-Treasurer from 1954 to 1956. Her devoted and capable administration of this unbelievably demanding position can be attested by colleagues throughout the country. Her courageous leadership was formally acknowledged by members who served under

² An account by Wallerstein of these many contributions to the Psychotherapy Research Project, appears in the July, 1960, issue of the *Bulletin of the Menninger Clinic*.

her on numerous committees. And she repeatedly accepted challenges to write about her field and her interests for handbooks, surveys, etc., the last being her co-authorship of the chapter on "Clinical Psychology" in the recently published *American Handbook of Psychiatry*.

All of these various threads of inquiry and activity she held in her hands at the time of her death.

Throughout this career of significant scientific attainments, her personal life was rich indeed. Her interests ranged widely, and her friends included many more than her colleagues. With them she shared her love of birds and bird lore, photography, travel and new experiences. With friends, as well as with colleagues, her physical limitations which on first acquaintance seemed to loom so large gradually diminished in importance, for she surmounted these and as one came to know her, one forgot that she was in a wheel chair.

In professional matters she wore with deceptive ease a profound knowledge of many related fields—personality theory, formal logic, method, design and statistics, philosophy of science. These were often so beautifully integrated that one would do a "double take" upon recognizing the wisdom in the deceptive simplicity of

her observations, offered as they were with cheerfulness and wit. For she was engagingly candid, modest and utterly unsaintly, and this combination of wisdom and personal charm helps to account for the unique impact she and her gently expressed ideas had upon her colleagues.

Those who had read and admired her work at a distance, those who came and served as consultants to The Menninger Foundation and worked with her for hours or days at a time, and those who worked intimately with her day by day, transacted their professional work with her in terms of an absolute normality of human communication, often without awareness of the incessant and frequently severe pain from which she suffered, with only vague awareness of the enormous and continuous driving power which made so frail a machine capable of such achievement over so many years. Few indeed, except those medically responsible for her, recognized how fragile a hold she maintained upon life in the last fifteen years—fifteen enormously creative years.

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Fantasy Aggression and Learning in Emotionally Disturbed and Normal Children¹

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In recent years there has been considerable research interest in the problem of relations between aggression in fantasy and in behavior (e.g., Davids et al., 1955; Feshbach, 1955; Gluck, 1955; Jensen, 1957; Kagan, 1956 & 1958; Lesser, 1957; Lindzey & Tejessy, 1956; Livson & Mussen, 1957; Mussen & Naylor, 1954; Purcell, 1956). In general, studies of overt and covert expressions of aggression have led to rather conflicting findings and the role of such factors as age, sex, social class, child rearing practices, and psychological defense mechanisms, are far from completely understood.

The purpose of this report is to contribute some further experimental findings to this important and perplexing area of investigation. More specifically, utilizing a projective technique and experimental procedures for assessing verbal and motor learning, we will attempt to discover relations between indices of fantasy aggression, learning of aggressive verbal material, and motor learning under conditions of frustration. Relations between fantasy measures and learning ability will be studied in a group of normal boys and in a group of emotionally disturbed boys who have experienced considerable difficulty in coping with their aggressive drives.

METHOD

Subjects. There were two groups of

subjects (Ss) in this study. One group consisted of 30 normal boys from the public school system. The mean age in this group was 10 years, 9 months, and the mean I.Q. was 100. The second group consisted of 26 boys who were institutionalized for emotional disturbances, with the majority being diagnosed psychiatrically as passive-aggressive personalities, aggressive type. The mean age in this disturbed group was 10 years, 7 months, and the mean I.Q. was 95. The majority of children in both groups were from middle and upper lower class socioeconomic backgrounds. Thus, the groups were matched for sex, age, I.Q., and social class, but differed markedly on the variable of aggressive psychopathology.

Fantasy aggression. The Ss were individually administered the children's form of the Rosenzweig Picture-Frustration Study (Rosenzweig et al., 1948). Responses to this projective technique were scored for signs of impunitiveness (M) and extrapunitive-ness (E). The M% provides a measure of the S's tendency to *not* express aggression in response to stimulus situations designed to be frustrating, and can be viewed as an index of frustration tolerance. The E% provides a measure of the S's tendency to express outwardly directed aggression in response to frustration, and provides an index of the readiness to express aggression in social situations. It must be emphasized that these measures are derived from projective protocols and are concerned with expression or inhibition of aggression in fantasy situations. It is obvious that one cannot safely infer a direct relationship between this fantasy expression and the actual handling of aggressive impulses

¹ We wish to express our appreciation to the administration and staff of the Bradley Hospital, in Riverside, Rhode Island, for facilitating the study of the emotionally disturbed children. Also, we wish to acknowledge our gratitude to Mr. Edward L. Martin, superintendent of public schools in East Providence, Rhode Island, and Mrs. Louise Favorite, school psychologist, for their cooperation in providing normal children for this study.

in real life situations. Relations between expression of drives in fantasy and in every day reality situations are an empirical problem that can only be understood by much further research—a problem to which the present study hopes to make a small contribution.

Verbal learning. The method of paired-associates was used to study verbal learning of neutral and aggressive stimulus material. The following three stimulus words were designated to be neutral: rise, hear, begin. The following three stimulus words, matched with the neutral words for length and frequency in common usage (Thorndike & Lorge, 1944), were aggressive in connotation: kill, fight, hurt. Each word was printed on a 3 x 5 card, with a number from 1 to 6 on the reverse side of the card. The S's task was to learn to verbalize correctly which word was paired with each of the numbers. After receiving instructions designed to establish a "neutral", nonthreatening atmosphere, the S was familiarized with the task, using a sample word and number, then was presented with 10 learning trials. Between trials the cards were shuffled and presented in a random order. Errors were recorded.

Motor learning. An 11-point finger maze, mounted on an 18 x 15 wooden board, was used to study motor learning. A sample maze was used to acquaint the S with the task and then, after being blindfolded, he was given 10 trials of motor learning. The instructions were designed to be neutral, and on the first few trials the examiner offered no comments about the S's performance. However, at the completion of the third, sixth, and ninth trials, the examiner made a negative comment such as, "That wasn't very good that time," or "That wasn't a good trial either." Thus, the experimental procedure was designed to introduce failure stress or frustration into the process of learning. Errors were recorded.

RESULTS AND DISCUSSION

It was predicted that E% would be negatively correlated with the number of errors in the verbal learning situation. The rationale for this expectation was based on the notion that E% indicates the S's sensitivity to aggressive situations and provides a measure of the readiness with which he verbalizes aggressive material. If the S responds to projective stimuli with a relatively high amount of aggressive expression, he may well experience relatively little difficulty in learning verbal material that requires open expression of aggressive words. If, on the other hand, the S inhibits aggressive responses in the fantasies expressed to projective stimuli, it seems plausible that the same defense mechanisms that operate in the projective test situation will make it relatively difficult to master verbal material that requires perceiving, retaining, and openly expressing highly aggressive words.

For the group of normal Ss, this predicted relationship was not obtained. In fact, instead of the predicted negative association, a nonsignificant positive correlation of .27 was found between E% and number of errors in verbal learning. For the group of emotionally disturbed Ss, however, the hypothesized negative relationship was obtained, as indicated by the highly significant correlation of $-.63$. This finding shows that in the group of children who had emotional difficulties involving severe problems in controlling aggressive impulses, the Ss who freely verbalized outwardly directed aggressive feelings in their projective test responses tended to have relatively little difficulty in learning and remembering verbal material of an aggressive nature. Conversely, the disturbed Ss who showed relatively little fantasy aggression in response to the projective test stimulus situations, probably as a function of defense mechanisms leading to suppression, inhibition, or denial of hostile im-

pulses, tended to have relatively great difficulty (i.e., high error scores) in learning verbal material with aggressive connotations.

With the normal boys, however, in whom the problem of coping with aggression had not attained pathological proportions, there was no significant association between fantasy aggression and mastery of aggressive words in the learning situation. With full cognizance of the fact that little emphasis should be placed on nonsignificant findings, the present results suggest a trend indicative of inhibition of fantasy aggression being positively related with ease of learning aggressive words in the normal group of Ss. Although no conclusions in this regard can be drawn at this time, the trend indicated in this study seems deserving of future research attention in studies of normal children.

Turning now to relations between fantasy aggression in response to frustrating situations depicted by the projective test, and motor learning under frustrating conditions, it was predicted that high M% scores would be correlated with low error scores on the finger maze. The basis of this prediction was the notion that impunitiveness on the Rosenzweig test is a sign of good frustration tolerance. If this sort of nonaggressive reaction to frustrating social situations on the projective test is a valid index of frustration tolerance, then it seems warranted to expect that Ss with high M scores should be less susceptible to disrupting effects of frustration while attempting to cope with the demands made by a learning situation.

The findings obtained from the group of normal Ss do not fit with this expectation. Instead of the predicted negative association between M% and errors in motor learning, in the normal group a positive correlation of .36 was obtained. This coefficient just approaches the .05 level with a 2-tailed test of significance, and suggests that for the normal boys there was a tendency for Ss who were rela-

tively high on impunitiveness to make a relatively high number of errors when attempting to learn and master a motor performance under conditions of experimental frustration.

With the group of disturbed Ss, the predicted negative relationship was found. The obtained coefficient of -.33 attains the .05 level of significance with a 1-tailed test. This correlation, which is not of great magnitude, suggests that the aggressive boys who were able to formulate impunitive responses to the frustrating situations described by the Rosenzweig test tended to make relatively few errors in the motor learning situation that required them to keep working constructively in the face of adverse verbal comments from the adult examiner.

Thus, in both learning situations exactly opposite tendencies were evidenced by the normal Ss and by the emotionally disturbed Ss. In both experimental situations the disturbed children tended to perform in keeping with our theoretical expectations, while the performance of the normal boys was not as predicted. In view of the complexities that exist in any attempt to make the empirical step from projective responses to actual behaviors, the present findings are quite encouraging and suggest that opposite and seemingly conflicting results may well be expected in studies employing Ss possessing varying degrees of the attributes under investigation. In this regard, it is noteworthy that investigators who attempt to study phenomena such as homosexuality or femininity in groups of male Ss who do not actually possess these characteristics in any appreciable degree often meet with dismal failure. With the current state of knowledge in this field, if one wishes to utilize projective techniques such as the TAT, Rorschach, and sentence completion test to study attributes such as homosexuality, prejudice, dependency, and achievement motivation, it would seem most fruitful to commence with studies employing Ss known to be relatively high on

the attribute under investigation. As greater knowledge about relations between overt behavior and responses to projective techniques is accumulated through research on Ss representing extremes on the psychological continua being assessed, studies of the predictive utility and validity of projective techniques administered to randomly selected groups of Ss will be based on firmer empirical foundation and the findings obtained may well appear less equivocal and more understandable.

At any rate the attribute of aggression is present in all living human beings, and in this topical area it seems appropriate to conduct comparative studies of individuals who possess pathological aggressive impulses and those who have evidenced no undue difficulty in coping with their aggressive drives. It seems, however, that it may well be necessary to formulate entirely different predictions about relations between aggression in fantasy and in overt behavior depending upon the types of Ss being studied. Eventually, what now appear to be paradoxical and conflicting findings may well be perfectly understandable and may fit very harmoniously within a unified theoretical explanation of the role of aggression in individual adjustment to the demands of social living.

SUMMARY

This paper reports certain findings in regard to relations between expression of aggression in fantasy, learning of hostile verbal material, and motor learning under conditions of experimental frustration. A group of normal boys and a group of institutionalized boys with psychiatric diagnosis indicating severe aggressive psychopathology were administered (a) the Rosenzweig Picture-Frustration Study, (b) a paired-associates learning task involving aggressive words, and (c) a motor learning task in which the examiner introduced frustration in the form of critical comments about the

subjects' performance.

As predicted, in the emotionally disturbed group a significant negative correlation was found between a measure of "extrapunitive" derived from the projective test and the number of errors evidenced in response to the verbal learning experiment. Also, as predicted, in the disturbed group there was a significant negative correlation between a measure of "impunitive" derived from the projective test responses and the number of errors revealed in motor learning under conditions of experimentally induced frustration.

Contrary to expectation, in the normal group, a nonsignificant positive correlation was found between the fantasy measure of impunitive and error scores indicative of difficulty in mastering a motor performance under frustrating conditions.

Some theoretical and practical implications of these findings were discussed, and some suggestions were considered for future research on relations between personality attributes revealed in response to projective tests and in overt behavior in everyday life.

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Developmental Level and Sensory Impairment in the Aged

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The Rorschach performance of aged subjects is reported to show an impoverishment of creative intellectual facilities, a faulty perception of reality and a narrowing of the range of interest (Davidson, 1952; Klopfer, 1916). These interpretations often are based upon generalized clinical findings derived from mixed groups of institutionalized and non-institutionalized aged Ss in comparison with hypothetical normal (young) groups. Although there is much evidence suggesting that aging is accompanied by sensory deficits (Lansing, 1952), and that sensory deficits are associated with lower levels of perceptual organization (Barker *et al.*, 1953), the relationship between such deficits and Rorschach functioning has been overlooked in studies with the aged.

Structural aspects of Rorschach response determinants have been employed to formulate scoring techniques (Friedman, 1953; Philips & Smith, 1953) based upon the principles of developmental psychology (Werner, 1948). The utility of these scores for discerning levels of maturity in a wide variety of contexts has been demonstrated (Hemmendinger, 1953; Lane, 1955; Phillips & Framo, 1954). The language used in Rorschach responses has been investigated by Grace (1956) who has formulated and validated a procedure for assessing the developmental level of content vocabulary. These scoring techniques

make it possible to investigate the Rorschach performance of aged Ss in terms of developmental level.

The hypotheses tested were concerned with the developmental level of Rorschach performance on the part of aged Ss with visual or auditory deficit (or both). Investigators (Barker *et al.*, 1953; Zucker, 1947) have shown a relationship between deafness and poor Rorschach performance in children; in consequence, it was hypothesized that hearing decrement would be associated with a lower developmental level of Rorschach performance among aged Ss. In view of the obvious relationship between vision and the Rorschach test performance, it was anticipated that uncorrected visual deficit would be associated with a decline in the developmental level of Rorschach. Where visual decrement was corrected, however, no such developmental decline would be expected. Ss with both auditory and visual deficit may be expected to perform at a lower level of Rorschach functioning than Ss with deficit in either sense system alone.

METHOD

Subjects: From the aged (60 years and older) volunteers seen by the Duke Geriatrics Project, 48 Ss were selected. All Ss were administered the WAIS and only those Ss with a Verbal IQ in the range 85 - 115 were included in this study. On the basis of neurological examination, subjects with clinical signs of central nervous system disorder were eliminated. A history of "stroke", (CVA), epilepsy, "shock therapy", paralysis, or penetrations of the skull (surgical or accidental) was a basis for exclusion. These subjects were all living in the community. A Snellen Chart (visual) examination served as the criterion for the as-

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signment of Ss to one of three groups according to visual function in their better eye. The normal group (V_1) functioned at 20/15 - 20/40, the corrected vision group (V_2) from 20/40⁻² to 20/100, corrected to 20/15 - 20/40, and the visual decrement group (V_3) performed at 20/40⁻² - 20/200.

Audition was examined with the use of a pure tone audiogram, MAICO model H-1B. Two groups were defined according to the mean decibel loss of the better ear in the range 256 to 2048 cps. The normal hearing group (H_1) functioned at the 0 - 19 db level, and Ss in the hearing decrement group (H_2) manifested a mean loss of 21 db loss or worse.

The visual and auditory examinations provided the basis for the placement of Ss in one cell of the 3 x 2 design with 3 columns for vision and 2 rows for audition. Figure 1 shows the model for the six cells of the experimental design and includes the limits established for mean visual and auditory functioning for Ss in each of the cells. The mean scores on the visual and auditory examinations are also included in this table.

Three dependent variables were utilized in the investigation. The Functional Integration Score, associated with the highest form of perceptual organization, (Rochwarg, 1954); Grace's (1956) Content Score which provides a developmental positive estimate of the vocabulary level of Rorschach responses and the Index

of Primitive Thought, reflecting the lowest level of perceptual organization.

RESULTS

The hypothesis that hearing decrement would be associated with a developmental decline in Rorschach performance was examined using non-parametric techniques. Mann-Whitney U Tests show a significant difference ($p < .01$) between the normal hearing (H_1) and hearing decrement (H_2) groups in the direction predicted on the Content ($z = 3.25$) and Functional Integration ($z = 3.13$) variables.

Primitive Thought was analyzed with a chi-square test of the distribution of Ss who exhibited this score. This procedure was adopted since the presence of Primitive Thought in a record is suggestive of psychopathology and Ss who exhibited any Primitive Thought might be expected to manifest an inordinate number of such responses.

The distribution of Primitive Thought scores does not support this hypothesis. Table I demonstrates that only four of the forty-eight Ss produced responses which could be identified as indicative of Primitive Thought. While three of these are in the H_2 group, there are not enough cases present to allow for a meaningful test of the hypothesis based upon this criterion.

In order to test the assumption,

FIGURE 1
Limits of Three Varying Degrees of Visual Acuity (V_1 , V_2 , V_3)^a and Two Levels of Auditory Acuity (H_1 , H_2)^b Established For Each Cell

	V_1	V_2	V_3
H_1	Normal Vision 20/15 - 20/40	Corrected Vision to 20/15 - 20/40	Poor Vision 20/40 ⁻² - 20/200
	Normal Hearing 0 - 19 db loss	Normal Hearing 0 - 19 db loss	Normal Hearing 0 - 19 db loss
H_2	Normal Vision 20/15 - 20/40	Corrected Vision to 20/15 - 20/40	Poor Vision 20/40 ⁻² - 20/200
	Hearing Loss 21 db or greater	Hearing Loss 21 db or greater	Hearing Loss 21 db or greater

^a Vision in better eye.

^b Hearing in better ear: 256 - 2048 cps range.

TABLE I — Chi-Square Analysis and Distribution of Subjects Showing Primitive Thought According To Auditory Group

Group	Distribution of Primitive Thought Scores		χ^2	p
	≥ 1	0		
Normal Hearing	1	23	1.09	.30
Hearing Decrement	3	21		

that visual impairment (even when corrected) would affect Rorschach performance. Content Score and Functional Integration Score differences were examined with a Mann-Whitney U Test. The resultant z 's (.62 and .57 respectively), do not refute an hypothesis of no difference. In the examination of the Primitive Thought score the chi-square obtained was essentially zero ($\chi^2 = .001$) again indicating no difference between the two groups being examined. Thus none of the (three) measures of Rorschach developmental level shows a significant difference between the normal vision (V_1) and visually corrected (V_2) groups.

The same procedures were adopted to test the hypothesis that normal functioning (V_1 plus V_2) and visual decrement (V_3) groups would differ. The results of Mann-Whitney U tests for Functional Integration and Content Score, and chi-square analysis of the distribution of Primitive Thought scores fails to reveal any systematic difference between the Rorschach developmental level of normally functioning and visually impaired Ss.

The fourth hypothesis relates to the performance of Ss who show decrement in both sensory parameters. While the eight Ss with both vision and hearing impaired show lower Content and Functional Integration scores than all other Ss combined (Mann-Whitney U tests yield scores significant at the .05 level), this hypothesis is not confirmed. When the Ss in this group (V_3H_2) are compared with the Ss showing hearing decrement alone (V_1H_2 plus V_2H_2), the

developmental scores are not significantly different.

DISCUSSION

Auditory Deficit: Auditory deficit, as defined in this investigation, appears to be related to a decline in the developmental level of Rorschach performance. Vocabulary level of Rorschach responses as measured by Grace's Content score, and cognitive ability as reflected in the Functional Integration Score were significantly lower in the hearing decrement group (in both cases $p < .01$). Aged individuals with impaired audition, when compared to their normally hearing peers, show a less mature perceptual approach to their environment, and developmentally lower level of communication. It may thus be inferred that these Ss are exhibiting a more poorly integrated personality.

Primitive Thought scores appeared in the protocols of only four of the 48 aged Ss in the present study. This finding is at variance with that of Rochwarg (1954) who reports that more than half of a group of 40 normal aged Ss (32 of whom resided in institutions) showed this sign. It seems clear that generalization of Rorschach performance or personality variables, from institutional to non-institutional aged should be made only with extreme caution. The Ss in this investigation would appear to show considerably less evidence of developmentally early thought processes than is found in a mixed institutionalized and community group.

Aged subjects with visual and auditory difficulty combined did not perform at a significantly lower developmental level than did Ss with hearing decrement alone. In view of the extremely low performance level of the auditory decrement group, a baseline effect may be operating in this situation. Since all Ss were making an adjustment in the community, it may be anticipated that the Rorschach response patterns will be within a "normal" range. The functioning

of the auditory decrement group may be approaching the lower limits of normal.

Visual Deficit: The results of this study indicate that visual impairment, within the limits defined in this study, corrected or uncorrected, is not reflected in a decline in Functional Integration score, Content Score, or Index of Primitive Thought derived from the Rorschach. It may be inferred that visual decrement in the aged is not associated with personality change, as reflected in a developmental analysis of the Rorschach. The present study suggests that the Rorschach blot can be made a good deal more ambiguous to the subjects, without major changes in the response properties.

SUMMARY

A study was performed to investigate the effects of visual and hearing decrement on Rorschach performance in an aged population. The Rorschach was administered to 48 senescent community-adjusted volunteers divided into six groups on the basis of three visual and two auditory levels of functioning. All subjects were screened to eliminate those with neurologically definable CNS damage and extremes of Verbal IQ. Three dependent variables, Functional Integration score, Grace's Content (Vocabulary) score and the Index of Primitive Thought were utilized, to reflect various levels on a developmental continuum of Rorschach performance.

The results indicate that:

1. Impaired hearing is associated with a significantly lowered developmental performance as defined by vocabulary level and Functional Integration scores.

2. No differences appear between subjects with normal vision and those with vision which is impaired but corrected, nor were differences found between subjects with normally func-

tioning vision and those with "impaired" vision.

3. The performance of subjects with both visual and auditory decrement is not worse than that of subjects showing auditory decrement alone; although the level of performance of these Ss is consistently the poorest of the subject population.

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The Fakability of the Kuder Preference Record and the Vocational Apperception Test

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The relative ease with which subjects have been able to fake their responses to the Kuder Preference Record (Kuder, 1949) has been reported by several investigators (Cross, 1948; Longstaff, 1948; Paterson, 1946; Traxler, 1941). Longstaff (1948) administered the Kuder twice to 59 college students. The first administration used standard instructions. Instructions on the second administration, however, were such that compliance with them required slanting of responses. Although the retest task was made difficult in that six vocational areas were to be faked upward simultaneously, his results still demonstrated the test to be readily fakable. Cross (1948), using High School students as subjects, found that even at this level of age and test-taking sophistication faking of the Kuder was easily accomplished. These findings have led others (Blum and Balinsky, 1951; Perry and Shuttleworth, 1948) to question the appropriateness of using the Kuder in the personnel selection setting, i.e., where the respondent's motivation for taking the test is to obtain a position rather than to learn about his vocational interests.

Ammons, et. al., in 1949, published the Vocational Apperception Test (VAT), a projective test aimed at measurement of the subject's vocational interests in the context of his general personality structure. The VAT consists of 18 cards, each depicting an individual engaged in a specific occupation. The main figure on ten of these cards are women¹ and the remaining eight are structured for men².

Respondents are required to tell a story about each picture in a manner analagous to that utilized for the Thematic Apperception Test. Scoring consists of categorizing the content of each story, according to instructions provided in the manual (Ammons, et. al., 1949), under one or more of the subheadings in the main scoring categories of (1) General attitude toward an occupation, (2) Reasons for entering an occupation, (3) Areas of conflict, (4) Solution of conflict, and (5) Vocational and personal outcomes.

The purpose of the present investigation was to compare the fakability of the Kuder and the VAT. Although determining the extent to which the VAT can be faked is but one step in its development as an adequate measure of vocational interests, it was felt that this step was particularly important in light of the repeated demonstration of Kuder fakability.

PROCEDURES

Thirty subjects, all college seniors majoring in retailing, were used in the present study. Fifteen subjects were males and 15 were females. The Kuder, Form BB, and the VAT were administered to each subject under standard, manual instructions, i.e., of the type one would typically find in a guidance or counseling setting. Approximately one week later, both tests were readministered to each subject. In this case, however, test-taking instructions were such that compliance with them necessitated falsifying of responses by the subjects. To simulate the type of selection situation in which the true interests and attitudes of the applicant are not in accord with those demanded by the job, and

¹ Laboratory technician, dietician, buyer, nurse, teacher, artist, secretary, social worker, mother and housewife.

² Teacher, executive or office worker, doctor,

lawyer, engineer, personnel or social worker, salesman, and laboratory technician.

hence where faking is necessary, all subjects were given the following directions, which are fashioned after those used by Wesman (1952, p. 112): "I want you to pretend that you are applying for the job of mathematics teacher in a suburban High School. You have been unemployed for some time, have a family to support, and want to 'land' this position very much. You are being given these tests by the Assistant Principal." Mathematics teacher was chosen as the occupation to be faked because of the relatively low Kuder scores typically obtained by retailers in the vocational areas³ most closely related to the teaching of mathematics (Kuder, 1946).

The Kuder was scored in the standard manner. All VAT stories were recorded verbatim and scored, by two independent judges, under the categories described in the VAT manual (Ammons, et. al., 1949). For the most part, statistical analysis took the form of comparison of test scores under "guidance" instructions with the subjects' corresponding scores obtained under "selection" instructions.

RESULTS AND DISCUSSION

Kuder Preference Record

It was hypothesized that successful faking of Kuder responses, i.e., successfully creating the interest pattern of a mathematics teacher on the second Kuder after responding to the first as a retailer, would take the form of significantly higher Computational and Scientific scores and a significantly lower Persuasive score on the second Kuder. Table I indicates the mean Kuder scores for both tests and the differences between these means.

Table I demonstrates that the subjects were successfully able to create the hypothesized pattern of Kuder scores. Scores on the three vocational areas under consideration changed in the predicted direction. These findings are in agreement with those of

TABLE I—Mean Kuder Preference Record Raw Scores and Differences between Means

Kuder Area	Test One	Test Two	Difference
Mec.	55.0	63.9	8.9
Com.	27.9	60.9	33.0**
Sci.	51.2	72.0	20.8*
Per.	98.2	63.6	34.6**
Art.	46.0	36.9	9.1
Lit.	19.0	51.9	5.9
Mus.	23.0	14.3	8.7
Soc.	82.1	88.1	5.7
Cle.	51.7	56.3	5.6

*Significant at .05 level.

**Significant at .01 level.

Cross (1948), Longstaff (1948), and Paterson (1946).

Vocational Apperception Test

The fakability of the VAT was examined according to three criteria. Primary among these, as was the case with the Kuder, was an analysis of responses to those VAT cards which logically relate most closely to the occupations of retailer and mathematics teacher. These are the Salesman and Teacher cards for men and the Buyer and Teacher cards for women. A chi-square analysis was performed on selected responses to each of these cards, this analysis attempting to represent a comparison of responses under the two different test instructions. The responses chosen were those categorized under "General attitudes toward an occupation," with the subheadings of this category being dichotomized into "Like" and "Like" versus "Dislike," "Indifferent," and "Ambivalent" and those categorized under "Vocational and personal outcomes," with the subheadings dichotomized into "Success" and "Continues in the field," and "Changes to better job within field" versus "Dissatisfaction," "Leaves field," "Outcome vague," and "Confusion." In essence, these dichotomies attempted to represent favorable versus unfavorable general attitudes toward an occupation and favorable versus unfavorable vocational and personal outcome. If faking of the

³ Computational, Mechanical, and Scientific.

VAT was successful, the foregoing analysis should have demonstrated the "selection" VAT to have significantly more favorable and significantly less unfavorable general attitudes and outcomes on the teacher card stories than was the case on the same cards on the "guidance" VAT. Successful faking should have also resulted in significantly less favorable and significantly more unfavorable general attitudes and outcomes on the Salesman and Buyer cards on the "selection" VAT as compared to the "guidance" VAT. None of these chi-square comparisons reached accepted levels of statistical significance, thus apparently indicating, with regard to this criterion, the inability of the subjects to create successfully a false interest picture on the VAT.

Not only might successful faking have resulted in qualitative response changes (favorable and unfavorable) from the first administration to the second, but certain quantitative changes should also have taken place. It was hypothesized that the subjects would state more reasons for entering the teaching occupation and fewer reasons for entering the retailing occupation on the second administration. Further, the responses to the Teacher cards should have included fewer statements of conflict and those to the Salesman and Buyer cards more conflict statements on the second administration. These comparisons were made, for male and female subjects separately, by use of the binomial test and in no case were significant results obtained. Once again, therefore, the subjects appear to have been unable to falsify their responses satisfactorily.

There is yet a third means which subjects might have utilized to attempt to create, on the second administration, the picture of interest in the teaching of mathematics. This would involve changing the main story character on the second VAT on such cards as Engineer, Lawyer, and Artist to teacher of engineering, of law, and of art, i.e., an attempt to create a

picture of general interest in the teaching profession. This method of faking, however, occurred in only 27 of the 270 stories told on the second administration. This third criterion, therefore, also indicates that the subjects were generally unable to create an interest picture in accord with the faking instructions.

The subjects' performance on both the Kuder and the VAT appears to offer evidence, on the dimension of ease of faking only, favoring the measurement of vocational interests via the use of projective stimuli when this measurement is for personnel selection purposes.

SUMMARY

The present study attempted to compare the fakability of two measures of vocational interest, the Kuder Preference Record and the Vocational Apperception Test. Thirty subjects, all college seniors majoring in retailing, took each test under two sets of instructions: (1) as per manual, and (2) as if they were applying for the position of High School mathematics teacher. These differing instructions were discussed as being somewhat analogous to the guidance and personnel selection settings, respectively. Fakability was determined on the basis of test-retest comparisons for both instruments. The findings indicated success on the part of the subjects in falsifying their responses on the Kuder. Their VAT responses, however, were not successfully faked when successful faking was defined in terms of three criteria which were developed. The results were interpreted as offering some support for the use of projective measurement of vocational interests in the personnel selection setting.

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Hostility Content Analysis of the Rorschach and TAT^{1, 2}

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The quantitative measurement of hostility as derived from projective test protocols has received considerable attention in the research literature with the primary goal being one of relating test derived hostility to behavioral manifestations of hostility. Elizur (1949) was one of the first to develop a weighted scoring system for hostile content on the Rorschach. He assigned a weight of two for openly expressed hostility and one for responses which expressed hostility to a lesser degree or in a symbolic manner. Walker (1951) devised another scoring system for hostile Rorschach content utilizing a five-point rating scale as he thought Elizur's system provided too "coarse" a grouping. He had three judges rate 55 responses on the five-point scale and found significant relationships between the judges' ratings. Finney (1955) delineated, on a "rational and *a priori*" basis, five kinds of destructive Rorschach responses and gave them an ascending weighting of one to five. Another Rorschach content hostility rating scale was devised by Gluck (1955a) which had an overt and covert dimension of hostility with a rating of one or two given for each category depending on the intensity of the expressed hostility. The correlation between overt and covert scores was positive (.33) but just approached significance. The overt-covert dimension was also in-

cluded in the eight-point Rorschach hostility scale of Murstein (1956). An additional dimension was utilized extending from the more simple to the more complex forms of phyla with the higher hostile score for a given action given to the higher phyla.

Hostility content scales have also been developed for the TAT. Fine (1955) has presented a general scoring scheme for the TAT which includes a subscale of hostility. Hostility is subdivided into three types: verbal, physical, and death with the presence or absence of these types of hostility being tabulated for each TAT card story. Gluck (1955b) devised a specific TAT hostility rating scale with an overt-covert dimension similar to his Rorschach scale. However, stories were given a zero to three point weighting instead of the zero to two point system he used for Rorschach responses. The correlation between overt and covert scores was only .04 and he therefore concluded that the scales were independent. Another TAT scoring system for aggressive content was reported by Stone (1956). He used the three subdivisions of hostility that Fine used, but gave them point weights of three for death, two for physical aggression, and one for verbal aggression content. He made an additional scoring for active and potential aggression with the latter getting only half the point credit given.

One of the main criticisms of many of the above mentioned studies would seem to be the arbitrary manner in which the weightings were assigned to different types of hostile content. When instead, weightings were assigned on the basis of judges' ratings, the number of judges involved was

¹ This study was conducted while the authors were at Washington University Medical school.

² The authors wish to express their appreciation to Bette M. Caldwell, Loretta K. Cass, Laverne C. Johnson, John G. Napoli, Jerome D. Pauker, Donald M. Pollic, K. Warner Schaie, J. O. Sines, and John A. Stern who served as judges and to Shirley Millstone.

relatively small. In examining some of the examples of hostile responses given in some of the scales, one might also question how appropriately certain responses could be said to be hostile in nature.

The present study was an attempt to devise Rorschach and TAT hostility content scales which would overcome the shortcomings of previously developed scales. The second important consideration was to devise similar scales which would allow comparison, in a quantitative way, of a person's hostile content on the Rorschach and TAT. Elizur (1949) has stated that the Rorschach type of test provided a more subtle means of putting a person off guard than the TAT type of test and, therefore, should give a more sensitive measure of things like hostility. Shatin (1955) made a comparison of Rorschach and TAT test results and found considerable interrelationship over a broad range of variables, but he did not make any comparison of hostile content in his study.

PROCEDURE

Hostility Scale Derivations

A list of 200 Rorschach responses was compiled primarily of responses thought to be hostile in nature and representing a wide variety of categories. Included in the list were those responses which were given as examples in the previously devised scales. Similarly, a list of 100 TAT themes was compiled. These lists were then submitted to eight experienced clinical psychologists who acted as judges. The judges were asked to independently rank each Rorschach response and TAT theme on a zero to four point scale according to the degree of hostility involved with four being the most hostile and zero indicative of no hostility. The following definition was given to the judges: Hostility is defined as feelings, thoughts, or actions which involve destruction, aggression, enmity, derogation, criticality, anger, guilt, negativism and phy-

sical deformities, illness, and death. Objects which are associated with these factors are included in the definition.

The judges were given a second copy of the lists and asked to sort the responses and themes into three groups of overt, covert, or no hostility. Overt hostility was defined as that hostility which is manifest and direct. Covert hostility was defined as that hostility which is insidious, indirect, disguised, or latent.

Application of the Scales

The Rorschach and TAT were administered to 30 psychiatric patients who had a diagnosis of neurosis, psychosis, or character disorder. No known or suspected organic cases were included. The sample ranged from the lower to upper socio-economic levels with all but one patient being white. The age range of the patients was from 16 to 51 with a mean age of 30 years. Twenty of the patients were males and 10 females. Standard Beck Rorschach instructions and Murray TAT instructions were used and were read to each subject. Twelve TAT cards were used and were selected primarily on the basis of those used in previous studies of hostility. The cards and order of presentation were as follows: 1, 4, 9GF, 7BM, 14, 18GF, 7GF, 8BM, 13MF, 18BM, 6BM, 20.

The Rorschach and TAT test protocols were independently rated on the newly devised hostility scales. To check on the reliability of the scales, two scorers did independent ratings of all the protocols.

RESULTS

The Hostility Scales

Product-moment correlations were computed between the judges for the weighted ratings of the 200 Rorschach responses and are presented in Table I. The mean r was .59 with a SD of .06. All of the correlations were significant beyond the .01 level. The product-moment correlations of the overt-covert classification of the Rorschach

TABLE I—Inter-Judge Correlations^a for Weighted Hostility Scale
Rorschach Items

Judge	1	2	3	4	5	6	7	8
1								
2	.64							
3	.60	.64						
4	.43	.51	.63					
5	.59	.53	.67	.54				
6	.63	.57	.62	.53	.65			
7	.65	.67	.64	.57	.57	.59		
8	.66	.68	.63	.52	.59	.54	.58	

^a All coefficients significant at the .01 levelTABLE II—Inter-Judge Correlations^a for Overt-Covert Hostility Scale
Rorschach Items

Judge	1	2	3	4	5	6	7	8
1								
2	.48							
3	.32	.42						
4	.44	.55	.41					
5	.52	.43	.61	.40				
6	.37	.83	.72	.51	.34			
7	.36	.48	.46	.74	.57	.37		
8	.43	.56	.54	.48	.64	.83	.51	

^a All coefficients significant at the .01 levelTABLE III—Inter-Judge Correlations^a for Weighted Hostility Scale
TAT Items

Judge	1	2	3	4	5	6	7	8
1								
2	.58							
3	.58	.59						
4	.56	.52	.66					
5	.54	.56	.67	.53				
6	.57	.72	.64	.72	.54			
7	.59	.57	.68	.58	.64	.55		
8	.50	.63	.68	.63	.68	.69	.66	

^a All coefficients significant at the .01 levelTABLE IV—Inter-Judge Correlations^a for Overt-Covert Hostility Scale
TAT Items

Judge	1	2	3	4	5	6	7	8
1								
2	.51							
3	.48	.45						
4	.44	.36	.49					
5	.42	.41	.40	.42				
6	.60	.54	.48	.36	.39			
7	.40	.37	.63	.64	.43	.35		
8	.43	.32	.53	.29	.44	.31	.38	

^a All coefficients significant at the .01 level

responses are presented in Table II. The mean r was .51 and SD .14 with all correlations significant beyond the .01 level. The product-moment correlations for the 100 TAT theme weighted ratings of the judges are presented in Table III. All correlations were significant beyond the .01

level with a mean r of .61 and SD of .06. The overt-covert classification correlations for the TAT themes are presented in Table IV. The mean r was .44 and SD .09 with all correlations significant beyond the .01 level. The variance was computed for the judges' ratings of each of the 200 Ror-

schach responses and those responses which were one and one-half times or less than the mean variance of all the responses were used to categorize the responses for the hostility scale. The scale value placement of a response was determined by its mean rating. This same method was followed for the overt-covert classification of the Rorschach responses and for the weighted ratings of the TAT themes and overt-covert classification as well. The resulting categorization of the weighted score scales for the Rorschach and TAT are presented below.³

RORSCHACH HOSTILITY WEIGHTED
SCORE SCALE

Human Content

- 4 points: humans engaged in human combat; injured, dismembered, or dead humans as a result of combat.
- 3 points: humans engaged in an argument; angry people; people engaged in competitive physical acts; deformed; injured, diseased, or dead humans.
- 2 points: humans or mythological figures primarily associated with hostile acts; derogatory descriptions of people; humans engaged in passive hostile acts; human skeletons.
- 1 point: humans or human-like figures partially associated with hostile acts.
- 0 points: no hostile content indicated.

Animal Content

- 4 points: animals engaged in a death fight; animals killing or devouring prey.
- 3 points: animals fighting or about to attack; injured, deformed, or killed animals; decomposing dead animals; animals eating dead animals which they have not killed.
- 2 points: animals primarily associated with hostile acts; parts of animals associated with hostility; dead animals; dressed animals; dismembered animal skin.
- 1 point: animals or parts of animals with some hostile associations; animal skeletons.
- 0 points: no hostile content indicated.

³ Copies of the complete scales may be obtained from the authors.

Inanimate Content

- 3 points: objects primarily of a hostile nature seen in motion; objects used primarily for the killing of humans; abstractions depicting hostility.
- 2 points: objects usually associated with hostile acts; destructive acts of nature; death symbols.
- 1 point: objects sometimes associated with hostile acts.
- 0 points: no hostile content indicated.

TAT HOSTILITY WEIGHTED
SCORE SCALE

- 4 points: themes involving direct physical hostile acts between people or towards the self.
- 3 points: themes involving hate; thoughts, feelings, dreams or threats of direct physical hostile acts between people; themes involving punishment, permanent debilitating injury, and death; themes of direct physical hostile acts involving animals.
- 2 points: themes involving verbal hostility; derogatory descriptions of people; anti-social acts; people forced by others to do things; hostile or negative emotionality; rejections; illness and accidents involving injury; destruction of inanimate objects; predatory animals; destructive forces of nature; weapons.
- 1 point: themes involving emotional deprivation; guilt feelings; escape; misfortune; death symbols; broken objects; the military.
- 0 points: themes without hostile content.

APPLICATION OF SCALES

Product-moment correlations for inter-scorer reliability on the weighted scale, overt, and covert scores are presented in Table V. All of the correlations were significant beyond the .01 level.

TABLE V—Inter-Scorer Reliabilities^a
for Hostility Scales

Test	Weighted Scale	Overt Scale	Covert Scale
Rorschach	.83	.97	.91
TAT	.87	.76	.78

^a All coefficients significant at the .01 level

With the Rorschach hostility measures, the product-moment correlations between the overt and covert scores, overt and weighted scale scores, and covert and weighted scale scores were high and positive and significant beyond the .01 level. These findings are presented in Table VI. The product-moment correlations on the TAT between the overt scores and weighted scale scores and the covert scores and the weighted scale scores were also high and positive and significant beyond the .01 level. The correlation between the overt and covert scores on the TAT, however, was $-.438$ which was significant beyond the .05 level. These results are also presented in Table VI.

TABLE VI—Inter-Correlations of Hostility Scale Scores

Test	Overt Vs. Covert Scale	Overt Vs. Weighted Scale	Covert Vs. Weighted Scale
Rorschach	.77**	.93**	.95**
TAT	-.44*	.66**	.72**

* significant $< .05$ level
 ** significant $< .01$ level

Correlational comparisons were made between the hostility scores on the Rorschach and TAT. The Pearson r between the weighted scale scores of the Rorschach and TAT was .316 which was not significant. The correlation between the Rorschach and TAT overt hostility scores was .127 which was not significant. A non-significant negative r of $-.122$ was found between the covert scores on the Rorschach and TAT.

DISCUSSION

Considering first the inter-judge correlations in the development of the scales, a fairly high degree of agreement was found on the ratings of the specific items for the weighted hostility scales and for the overt-covert dimension. A comparison of the placement of items of similar content in the Rorschach and TAT weighted scales shows a general consistency between the two scales. Exceptions to

this are to be found with the items categorized as death symbols, arguing, anger, and the military. In each case, these items received a weight that was one point higher on the Rorschach than on the TAT scales. In comparing the consistency of placement on the overt and covert scales of the two tests, one exception is found and that with the item of dying person. This receives an overt classification on the Rorschach and covert classification on the TAT. The general overall consistency found in the placement of items on the Rorschach and TAT weighted and overt and covert scales is an essential requirement if comparison is to be made of a person's performance on the tests in regard to hostility.

A further evaluation of the scales was possible when they were applied to a specific group of subjects. These findings, however, must be restricted to the present population of subjects and any generalizing must await further application of the scales to different populations. Considering the Rorschach scales first, the similar magnitude of the correlations between the overt scale and weighted scale and the covert scale and weighted scale indicates that overt and covert scores were contributing in a similar manner to the total weighted scale score. The high correlation between the overt and covert scale scores shows a lack of independence of the overt and covert scales. This indicates that a high number of overt hostile responses on the Rorschach would be expected to show a high number of covert hostile responses. The relationship is a relative one, however, as an inspection of the present Rorschach protocols shows a preponderance of covert responses. A lack of independence was also suggested in the overt and covert scales that Gluck (1955) developed for the Rorschach. With the TAT scales of the present study, the overt and covert scale scores were found to be highly related to the weighted scale scores, but not to the

same degree as found with the Rorschach. The overt and covert scale scores were also found not to be independent, but were negatively related so that a person scoring high on one would be expected to score low on the other. It would appear, therefore, that the TAT was more susceptible to individual differences in regard to the overt-covert dimension of hostility than was the Rorschach. This conclusion is also suggested in the finding of independence by Gluck (1955) with his overt and covert TAT hostility scales.

Further lack of consistency between the Rorschach and TAT in the expression of hostility is seen in the low, insignificant correlations between the weighted scale scores, the overt scale scores, and the covert scale scores of the two tests. If the assumption can be made that the hostility scales themselves are comparable as discussed previously, then the present results would point to a lack of relationship in regard to the dimension of hostility for the Rorschach and TAT. This may be related in part to the broader variety of content elicited by the Rorschach than the TAT with the TAT content being primarily people oriented. A factor of paramount importance, however, would seem to be that of the relative ambiguity of the test stimuli themselves. This is to be seen particularly with the TAT where the structural element of some of the pictures may be such as to inflate the probabilities of eliciting a hostile response. This means that the relative comparability between the Rorschach and TAT in regard to hostility may be a function of the particular TAT cards selected for the comparison. This points to the need for evaluating the entire set of TAT cards using the presently derived hostility scales to determine which cards tend to elicit more hostility than others and which cards tend to elicit overt hostility and which covert hostility. The same kind of evaluation is suggested for the Rorschach.

The qualifications initially set down in the discussion regarding the generality of the finding suggests the need for application of the present scales to different populations with specific characteristics regarding such things as psychiatric classifications, socio-economic levels, sex, race, etc. Of fundamental importance of course would be the relating of the scales to specific extra-test measures of hostility to further our understanding of the relationship between test behavior and other behavioral manifestations of hostility.

SUMMARY

Weighted hostility scales and overt hostility and covert hostility scales were devised for the Rorschach and TAT based on the ratings of eight judges. All inter-judge correlations were found to be positive and significant. The resulting scales were then applied to the Rorschach and TAT protocols of 30 psychiatric patients who had been administered the tests using a standardized procedure. The hostility scales were scored by two persons and the resulting inter-scorer reliabilities were all highly significant. For the Rorschach, correlations between the overt and weighted scale scores, covert and weighted scale scores, and the overt and covert scales were all positive and significant. The same was true for the TAT hostility scales except that the correlation between the overt and covert scales was a significant negative one. The correlations between the Rorschach and TAT weighted scale scores, overt scale scores, and covert scale scores were all non-significant. The conclusion suggested from the present findings was that there was an inconsistency in the way in which a person responded to the Rorschach and TAT in regard to hostility. Further investigations with the hostility scales were suggested with specific kinds of populations. Also, the ability of the various TAT and Rorschach cards to elicit hostile responses needs further inquiry.

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Rorschach Developmental Scores and Post-Hospital Adjustment of Married Male Schizophrenics¹

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In this study the relation between certain personality variables, as measured by Rorschach developmental scores, and the potential for successful post-hospital adjustment of a group of married male schizophrenics has been investigated.

Many attempts have been made to predict outcome for released hospital patients, but despite the variety of variables used by different investigators, the results, for the most part, have not been conclusive. Zubin and Windle (1954) and Huston and Pepernik (1958) have suggested that inconsistencies among the previous studies may be due to a lack of specificity of the kinds of variables used for predicting outcome. Prognostic studies require specificity of such factors as the nature of the subject population, the point of time within the life history from which the predictor variable is taken, the length of time during which outcome is evaluated, and the criteria used for evaluating outcome.

In the present study the attempt was made to work with a sharply defined population, for which the criteria of success would be explicitly stated. Marital status was considered as a major variable because of the

recognition that the process of post-hospital adjustment is likely to be very different for married than it is for single patients. The work of Freeman & Simmons (1958) showed that single patients differ markedly from married persons in terms of the level at which they function in the post-hospital period. The same authors (Simmons & Freeman) have also shown that single patients may remain outside of the hospital and perform at much lower levels of adjustment than do those who are married, upon whom greater demands are made for effective social functioning.

Despite the evidence that married patients are expected to perform at a high level in order to remain out of the hospital, a number of studies have demonstrated that patients who are married are more likely to succeed in staying out of the hospital than those who are single (Farina & Webb, 1956; Huston & Pepernik, 1958; Phillips, 1953). Thus, we chose to focus our attention on married male patients as a favorable prognostic class within which to study some of the personality variables associated with successful post-hospital adjustment.

The specific aim of the present study was to isolate what would appear to be relevant intra-psychic processes as they are manifested on the Rorschach test. The latter was chosen because of previous experience with the test in the Psychology Department at the Worcester State Hospital which showed that particular indices are consistently related to certain patterns of social and cognitive behavior. The Functional Integrative Index of the

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Rorschach Developmental Scoring System (Phillips, Kaden & Waldman, 1959) has been shown to be related to the ability to carry out complex perceptual-cognitive activities (Lipton, Kaden & Phillips, 1958) and to general social effectiveness (Smith & Phillips, 1959), as well as to the degree of participation in formal and informal groups (Jordan & Phillips, 1959).

A traditional Rorschach scoring category, which is closely related to the Functional Integrative score, is the human movement (M) response. This score also has a history of being associated with higher-level cognitive activity (Lipton, Kaden & Phillips, 1958) and various aspects of social behavior (Hurwitz, 1954; Kruger, 1954; Misch, 1954).

In the present study, it was assumed that successful post-hospital adjustment would require higher level cognitive activity and mature social behavior, the potential for which seems to be reflected in the Functional Integrative (Fi) and human movement (M) responses on the Rorschach test.

The specific hypothesis for this study was that the production of Functional Integrative and human movement responses on the Rorschach would be positively related to post-hospital adjustment.

METHOD

Subjects

From the files of all patients who had been tested by the Psychology Department at Worcester State Hospital over the twelve year period 1945-1957, patients were selected according to the following criteria: First admission, male, married, age 20-50, diagnosis of schizophrenia, no organic involvement, I.Q. of at least 80, and placed on extended visit subsequent to the testing. In addition, the clinical records on the patients had to contain enough information to enable categorization of the level of post-hospital adjustment. When the entire file had been screened, there remained a total

of 20 patients who met all these criteria.

Categorization

Patients were considered successful in their post-hospital adjustment if they met both of the following criteria: (a) they were able to remain on an extended visit for one year without return to the hospital except for periodic reports to the psychiatrist or social worker; and (b) they were employed for at least six months of the one year period of the extended visit. Patients were considered to have been unsuccessful in their post-hospital adjustment if they failed to meet either of these criteria. As a result of the classification, post-hospital adjustment was considered successful for eleven patients, and unsuccessful for nine.

The Rorschach protocols of the subjects were scored according to the rules of the developmental scoring system described by Phillips *et al* (1959). Subjects were placed into high and low groups on the Functional Integrative (Fi) and human movement (M) scores on the basis of a median split of these scores.

Statistical Technique

Rorschach scores and post-hospital adjustment scores were treated as dichotomous variables. Because of the small size of the sample and the non-parametric nature of the data, the Fisher Exact test was selected as the most appropriate statistical technique, following the suggestion of Siegel (1956).

RESULTS

As can be seen in Tables I and II, both Rorschach scores (Fi and M) show a significant positive relation with post-hospital adjustment.

Since questions have been raised as to the influence of the patient's age, education, level of intelligence, and length of hospitalization on post-hospital adjustment (Zubin & Windle, 1954), the relationships between each of these variables and post-hospital

TABLE I. Relationship between Fi and Post-Hospital Adjustment (P.H.A.)

	P. H. A.		
	Low	High	
High Fi	1	7	8
Low	8	4	12
	9	11	20

Fisher Exact: $P = .025$

TABLE II. Relationship between M and Post-Hospital Adjustment (P.H.A.)

	P H A		
	Low	High	
High M	0	6	6
Low	9	5	14
	9	11	20

Fisher Exact: $P = .025$

adjustment were evaluated and none was found to be significant.

DISCUSSION

The major hypothesis tested in this study was that the production of Functional Integrative (Fi) and human movement (M) responses would be positively related to post-hospital adjustment in a married male schizophrenic group. We find support for the hypothesis in that both the Fi and M scores show a significant positive relationship to post-hospital adjustment.

The task remains to conceptualize those aspects of personality function which are represented in the Fi and M indices. It was pointed out above that both these scores are considered to be intimately related to social behavior or to the interpersonal interaction patterns in which the individual becomes involved. Attempting to analyze one of the basic processes underlying effective social behavior, Fefter (1959) studied role-taking ability in a group of normal subjects and found that the Functional Integrative score was the best single Rorschach score in predicting capacity for role-taking behavior. Kaden (1958) analyzed husbands' verbal reports of mari-

tal interaction within a developmental scheme. In that study, a positive relationship was found between scoring on the Functional Integrative index and the degree of reciprocity in the marriage as verbalized by the husbands.

It appears, then, that the Fi score represents the ability to adopt alternative perspectives in an interpersonal context.

The human movement score on the Rorschach has been studied previously in terms of its specific relationship to marital interaction patterns. A study by Piotrowski and Dudek (1956) showed that couples who obtained divorces had a greater discrepancy in the M score between the husband and wife than did couples who persisted in their marriage despite difficulties. The same authors also reported that a group of divorced women tended to produce Rorschach records with no M responses, while women who maintained the marriage while seeking marital counseling gave considerably more M responses. In offering an interpretation of their results, Piotrowski and Dudek (1956) suggested that the M response reflects the potential for adequate interpersonal relationships. They emphasized that it is the intensity, rather than breadth, of interpersonal interaction that may be reflected in the production of human movement responses in the Rorschach test.

Thus it appears that, in a group of married male schizophrenics, a personality characteristic which is closely involved in the process of adjustment to society after hospitalization is a potential for adequate interpersonal behavior, particularly in the intensive dyadic relationship such as is involved in marriage.

It is clear, however, that a person with a capacity for dealing with another person in terms of reciprocity and mutuality may not be able to act in accordance with this capacity unless the other person in the relationship presents the opportunity for re-

ciprocal and mutual interaction. Thus it is likely that effective prediction of post-hospital adjustment for married patients may be made from a measure of the pre-morbid interaction patterns of the patient and his wife. Such a study is now in progress and will be reported in a future paper.

SUMMARY

The post-hospital adjustment of 20 married men who had been hospitalized with a diagnosis of schizophrenia was studied by means of case history data. Eleven patients were found to be successful in that they remained out of the hospital for a trial visit of one year's duration the first time they were placed on visit status, and worked for at least six months of that time. Nine patients were unsuccessful, being so classified because they failed to meet either of the above criteria. A positive relationship was found between two Rorschach developmental scores (Fi and M) and post-hospital adjustment. On the basis of previous research with these scores, the suggestion was made that the processes underlying the empirical relationship have to do with the capacity to carry on successfully intensive dyadic relationships such as are involved in marriage. Further study is planned in which the relation between pre-morbid marital interaction patterns and post-hospital adjustment will be evaluated.

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Psychological Test Study of a Mass Murderer

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Two weeks following the explosion of a commercial airliner, which killed forty-four persons, a twenty-three year old man confessed to having caused this tragedy. His mother had been a passenger aboard the plane and he admitted placing in her luggage a timebomb containing twenty-five sticks of dynamite. He was sent to a hospital for psychiatric evaluation after pleading insanity to the charge of murder.

The question, perhaps best phrased in lay terms, of what sort of a person would do such a thing, was widely raised. It is hoped that in presenting the psychological test findings on this individual, a contribution can be made to understanding the personality factors involved, to the end of considering the possibility of prediction and control of such destructive behavior.

From the standpoint of the clinical psychologist asked to contribute to the evaluation of legal sanity, this case exemplifies a number of problems. On the outcome of the total evaluation can often hinge a patient's very life. Thus, the testing situation involves stress which may provoke either exaggerated symptomatology or, in some cases, malingering. Both must be distinguished from basic pathology.

An even more knotty question may arise in attempting to translate the psychological formulation of personality into the arbitrary criteria of legal sanity. This was not the responsibility of the psychologist in this instance, but since it was an important issue of the case, it nevertheless deserves consideration.

HISTORY

The psychiatric findings on this patient have been previously reported by Galvin and Macdonald (1959),

and will be only briefly summarized here.

His father left his mother when the patient was eighteen months old, and he subsequently lived with his maternal grandmother while his mother worked. His mother was very generous with material gifts but not very affectionate. The patient was a bed-wetter until the age of six and had a history of cruelty to animals and fire-setting. When his grandmother died, he was placed, from ages six to eleven, in an institution for fatherless boys. During this period, his mother remarried a wealthy rancher, and the patient repeatedly ran away from the institution to this ranch. He was always sent back.

From ages eleven to sixteen, he lived with his mother and step-father. He then joined the Coast-Guard but was discharged at the end of six months, after being AWOL. Following this, he had frequent job changes, forged checks and engaged in other delinquency. The family paid back the money and he was given probation. Several suicide attempts were made during this period. He then married. When the step-father died, the patient's mother purchased a restaurant for him and she is reported to have interfered considerably with the management. His mother was leaving for Alaska to visit his sister, over the patient's strong protest that she stay for Thanksgiving, when the crime occurred. He was in good health. He had been sterilized earlier in the year of the crime because his wife had almost died delivering their second child.

PSYCHOLOGICAL TESTING

The patient was administered the Wechsler Adult Intelligence Scale, Rorschach, TAT, Sachs Sentence

Completion, Human Figure Drawings, Rapaport Word Association, and Rapaport Sorting Test.

BEHAVIOR DURING EXAMINATION

There were four testing sessions extending over a period of a week. The patient was initially quiet, non-spontaneous and somewhat sullen. His manner was slow and plodding. Nonetheless, he appeared cooperative and motivated to do well and was concerned about the examiner's comfort. During the administration of the projective test, he became increasingly tense, irritable and negativistic when he was pressed to explain and elaborate his responses. This behavior built up to the point where he was trembling considerably and began pacing the floor. In subsequent testing, he

was superficial and remained uninvolved in the procedures.

TEST PROTOCOLS

The following is a summary of his Weschler Adult Intelligence Scale, and the verbatim Rorschach, TAT, and Sentence Completion Protocols and Human Figure Drawings.

WAIS SUMMARY

Verbal	Performance
Information .....12	Digit Symbol 8
Comprehension 7	Picture Completion .....10
Arithmetic .....11	Block Design .....10
Similarities .....10	Picture Arrangement ....11
Digit Span .....11	Object Assembly .....10
Vocabulary .....13	Total .....49
Total .....64	Performance I.Q. 98
Verbal I.Q. ....104	(average)
(average)	(average)
Full Scale I.Q. 102 (average)	

RORSCHACH

I.

1. Δ 8". Looks like something with halloween mask on. 2 extra eyes. Like might be broke loose around ears where strap go around ears.

Might have a low forehead on him or something. About all.

W₍₁₎ F Mask

2. Δ Might be like some leaves laying on the ground or something. About all looks like to me. Nothing else at all.

d F Nat.

Total time 2' 15"

II.

1. Δ 25". Kinda looks like somebody's insides here. Dark spots might be lungs and red spots heart and liver.

Look like when cut a deer open or something.

W CF(C') Anat (blood)

2. Δ Looks like 2 red spots like some cut finger bled on paper, kinda blot it up or something.

D C blood

3. Δ Looks like 2 teddy bears standing on hind feet and putting front paws together or something.

1. 2 things stuck out like broke straps. These look like 2 sets of eyes cut in it. Like whiskers down here. I don't know (?) This might be part of mouth if not other eyes. (?) Probably be a wolf (?) All of it. (?) This like bald head and forehead close to nose. (?) Like this be head. (?) A wolf mask, baldheaded wearing it.

2. These 2 sticking out like leaves fallen from a tree. (?) Just looks like leaves. (?) Just a leaf. (?) Don't know, just like a leaf laying on ground.

1. Don't know. Just this looks like lungs. Maybe air got together and turned black. This might be throat and heart and liver. (?) This be heart, this liver. (?) I just going by same thing, might be heart, liver and lungs. (?) Just the red, Just associate with blood, I guess.

2. Up here, don't know, just seen, sometimes you drop blood and smear it with your finger or something. (?) Might have dropped here and turned paper in half.

3. This and this and paws together. (?) Don't know, just looks like bears. (?) This feet, head, ears. (?) His back, I guess. (?) Don't know, just impression it gave me. (?) Just part that is colored. (Getting edgy and angry.)

About all I can see in it. (Continues to stare at blot.)

D FM A P

Total time 2' 35"

III.

1. \wedge 8". Looks like two dancers with a big bow tie between them.

{ W F (M) H (P)
D FC (F_c) clo DW tendency

2. \wedge Maybe two broken banjos hanging up in the air behind them.

D F obj.

- \wedge Looks like a couple of drums in their hands, looks like. All I can see.

Total time 1' 40".

IV.

1. \wedge 10". Looks like a bear rug. All flattened out and arms pulled out at side and back legs turned up toward head of it.

W Fk (C') A object P

2. \wedge Too like some guy with logging boots on walking down a log, a real small head, maybe his arms are crippled or something.

That's all I guess.

W M H

Total time, 1' 45".

V.

1. \wedge 35". Looks like a donkey standing in middle, like two boards on each side of him, like maybe people lying on the boards. Looks like people might have one big leg and one deformed or something.

Donkey look like he's got knock knees or something.

People on board look like might have arms folded or something. I get only that one.

W FM (M) O

Total time 2' 20".

1. 2 black spots maybe dancers and maybe bow tie between them. Just the way it looks. (?) No idea. (?) One man, one woman. I don't know. (?) Don't know, to me no distinction like two dancers. (?) Head, arm and legs. (?) Just sort of imagined. (?) Probably some sort of ritual dancer.

Just looks like a big red bow tie. (?) Just looks like a bow tie, 2 big ends like it might be wrapped around the middle. (?) Don't know, just between them. I guess.

2. These two red spots. (?) Don't know, just a long piece sticking up and a round end on it. (?) Just the twisted shape of them.

1. Well, looks like skinned out bear lying there. (?) I seen bear rugs, just looks like one. This, head, front paws, tail, 2 hind paws. (?) Might be black bear. (?) Just the way it struck me. (?) Whole black spot.

2. Just looks like someone big feet, spikes in logging boots, this legs, back, arms, head. (?) Going other way, this is back. (?) Like arms might be deformed. (?) No, log can see. (?) All of it, I guess.

1. Like 2 big ears and back end and two legs, like he from here and people lying arms folded, elbows and legs. (?) Don't suppose ever would see. (?) Just the way it looks, that's all. One big leg or smaller leg. (?) Just people, I guess. (?) No way of telling. (?) Oh, don't know if ever would. No idea of ever seeing or how you would see it.

VI.

1. Δ 8". Looks like cats in some cartoons you see after run into tree or something, smash him flat.

W F A

2. Δ Maybe one that's been skinned out. Use it for a rug or something.

W F A obj

3. Δ Real dark line down his backbone. Looks like a sword with a heavy hilted handle.

I guess that's about it.

D F obj.

Total time 1' 45".

1. Looks like cat's whiskers stick up there. See cartoon. Tree falls on them and they run into a tree or something. (?) This head and rest of him all smashed flat. (?) Don't know. Just think of tom cat in cartoons. Be all covered with ink spots. (?) Head, front legs, hind legs.

2. Some creature just smashed or flat. (?) A cat. All of it ink spot there.

3. Just looks like this might be sword on with real heavy hilt on it. (?) Just what you see. (?) Oh, in a museum, wherever they use swords.
(Rubs hands together.)

VII.

1. Δ 50". Looks like two busts of somebody, both glaring at each other, like hair might be standing on end.

D M Hd

2. Δ And bottom part like some big bug, be a butterfly. Might be one big bust and that the base of it.

I guess that is everything I can see.

D F A

Total time 2' 15"

1. Looks like two people looking at one another. (?) Oh, like high forehead and eye, sunken way back. (?) Don't know. No distinction, 2 people, 2 faces. (?) Don't know. Just my impression. (?) Oh, I never seen it except right here. Just head, that is just the part, to hold heads, I guess.

2. Just this part like that be back two wings. (?) Just seeing butterfly I guess like a moth or something.

VIII.

1. Δ 15". Looks like 2 rats climbing side of tree maybe. Kinda red marks like leaving red foot prints behind there.

D FM(C) A (P)

2. Δ Top part looks like a big frog, instead of a head, he just has a big pair of pinchers.

D F— A

3. Δ Looks like part of it they might be swung by chain in center.

They might be just kinda suspended.

Dr m obj.

Total time 2' 0"

1. Just looks like 2 rats, like going up top of tree. (?) Head, 4 legs on each one of them. (?) Looks like one put foot and leave a red mark as move ahead. (?) Just looks like feet are red and those are red. (?) Maybe slipped into something red. Don't know. Just all looks like part of a tree. All but that.

2. This part and 2 like tongs stick out up top. (?) Legs, body and tongs.

3. Looks like something hung by a chain there. Just looks like something hanging on a chain or a rope. (?) No, could be most anything hanging there.

IX.

1. ^22". Looks like somebody might be looking out from a fishbowl or something. He might have a turban on, his fingers over a bunch of red flower pots.

W M— (FC—) H

2. ^Top part look like a couple of politicians standing, arguing, shaking fingers.

D M H

3. ^Part here looks like 2 green horses head. run noses together and flattened them out.

All I see.

D FM A

Total time 2' 15".

X.

1. ^10". Looks like a lot of bugs. Sea horses I see under ocean.

W FM A

2. ^2 like bugs up on top, like maybe arguing or something.

D FM A

3. ^A couple more look like sea horses, maybe riding. (?) Something carrying torch, riding like other under sea animals there.

D FM— A

4. ^2 more like they might be real small dogs with their hearts showing.

D FC— A (anat)

5. ^Looks like a wish bone in center.

D F A obj.

6. ^Looks like a couple of leaves in corners.

D FC nat

Total time, 2' 15".

1. Like white turbans, 2 eyes, looks like 5 black marks, like fingers. Like these be red flower pots. Green be fish bowl, orange part of fish bowl.

Are red on here. (?) Like they might be below it. (?) Like this set on part of a table, just below it on the picture. (?) I guess it could be anything. It could be bowls, I just call them flower pots.

2. Just 2 orange pieces, look like 2 fingers. This politician, this finger, no parts distinguishable, just reminds me of it. (?) Like shaking fingers at one another.

3. 2 horses head and that end of nose where they smashed them together, just the heads.

(Says smash with great feeling.)

1. This looks like sea horse riding something else. (?) This look like a sea horses head, like maybe sitting on something. Head tail, this something else underneath horse. (?) Just like setting on something.

2. 2 up here glaring at one another. Just features of—feelers, legs, eyes and mouth.

3. 2 green might be torch or something. Like sitting on other things, riding, look like might have a torch in hand. (?) Don't know, just the way it looks. (?) Same sea horse as before.

4. This right here, 2 like yellow things. Don't know, kinda like shape of dogs. (?) 2 like red marks kinda in the center. (?) Don't know, may be just what it looks like.

5. Just looks like a wish bone, a v shape, like a wishbone.

6. These 2 brown leaves just shape of fall leaves. (?) Are brown.

THEMATIC APPERCEPTION TEST

1.

Looks like someone laid a violin down. Kid look at it and wish he could play it. Probably talks somebody into giving him one and learns how to play a violin, I guess, that's all I guess. (?) Probably someone leaves a violin where he could see it. (?) Don't know. (?) I guess he feels he would like to play it. (?) Say he learns how to play a violin. That's all I can see.

2.

Looks like somebody maybe cultivating corn and potatoes, like some girl just get home from school and mother stands at tree watching her. I guess go on and get it all put up in the barn or something. (?) I don't know. Just standing there. I don't have any idea what they are thinking, guys plowing wants to get work done. The rest just standing watching, I guess. (?) I suppose born

and raised on a farm. (?) I guess ends all right. Probably get all hay there put up, that they are putting up.

3. BM

Looks like somebody sitting with head on bench sound asleep, I guess. Looks like he might have set down for a minute and fell asleep. Probably wakes up and goes on his business. (?) Oh, I guess probably works with his hands, does hard work, can't tell by picture. (?) Probably just set down to relax and fell asleep. (?) He wakes up and does what he was going to do. That's all I can see there.

4.

(Long, long pause, while patient stares and looks at card.) Looks like this guy is starting to leave and girl is holding him back or something. (Long, long pause.) Looks like she might be in love with him and he in love with someone else, like woman in picture in background. (Hands begin to tremble holding card.) Probably turns out he marries one of them, I don't know, all I see. (Which one marry?) I don't know. (?) Probably the one that is hanging onto him. (?) All right, I guess. (?) No idea. (At this point, the patient becomes increasingly agitated, rubs face with hands, sighs, and seems to be near tears. Trembling very markedly, suddenly jumps up and begins pacing.) See note in behavior section of report.

5.

Looks like somebody came in and left a vase of flowers for her. She opens door, surprised expression, probably someone is sick, left flowers and walked out or something. Probably someone she knew, knew someone was sick. They got well and everything all right. (?) Oh, maybe she was sick herself, maybe had a cold and got up. (?) Just a friend. (?) She quite surprised, glad someone left them.

6. BM

(Long pause.) Well, guy probably a public relations man, some big firm. Woman's husband work in a steel mill foundry. Looks of her clothes middle class, he's hurt, he's quite hurt over the whole thing, so is she. She can't hardly believe it actually happened. I guess that's all. (?) Oh, he'll be all right, I guess. (?) Oh, he got his shirt sleeve wrapped around a lathe and got hurt. (?) Oh, he gets all right. Everything's all right. (?) She feels quite hurt, now glad he is not hurt worse.

7. BM

(Pause) I say one a diplomat, something

like that, other a newspaper man, he tell what he said at a meeting that day. He write it down. (Stares at card) He prints it in his paper, gives the guy publicity and makes him happy. (?) Oh, maybe at a U.N. meeting. (?) Just telling him reporter wants a story, a good story for the day. Something to take up his time. (?) Guy prints story in paper, says thank you, is all.

8. BM

Looks like maybe this fellow shot in hunting accident. Looks like doctor or someone else operating, try to get bullet out, son stand with back so can't see what is going on. Tries to remember all things he and father done. Know he is badly hurt but know if he will get over it. Very crude operation. No ether. No way to sterilize instruments. Tell him to hold on sides of table while cut. Other fellow gets up, holds him down. Other guy take bullet out. Eventually recovers from it and everything turns out all right. (?) He and boy out hunting rabbits or deer or something. (?) Oh, going through barbed wire fence, trip trigger. (?) He ran and got help for father and brought him back and saved his life. (?) End all right. Man lives and goes hunting again (?) Oh, he real scared. Something happened to father, afraid father won't live.

9. BM

Looks like a bunch of cotton hands, lunch time, eat lunch, all lay down, take another half-hour break before go back to pick cotton again, I guess. Four came from the same town, all get same job for summer, have a good time, right afterwards, get up and go to work. Work about a week, quit and go home. (?) They finish picking cotton. No more to pick. (?) Had a good time when got home and on the way home both. (?) Oh, just having fun together, that is all.

10.

Oh, man and wife just embracing each other. Thank God everything turn out all right. Boy been sick, had a bad time, had a high fever, don't know if he is going to live or not. When he lived, they so thankful, they embrace each other. Each thank the Lord in own way for saving their son. I guess that is all. (?) Oh, he had diphtheria.

11.

I don't know what this is supposed to be back here. Looks like a — (long pause), what is it supposed to be? Do you know? — two men with horses. When rock slide occurred and closed trail, prospectors, just by edge of road when slide came, made it impassable.

(?) They already by it and got on horses and rode into town, that's all. (?) Gold and hadn't found any. (?) Just felt lucky they had made it.

12. M

Old fellow, his daughter very sick. He put his knee up on the bed. He kissed her and raised up. He didn't think she would ever live. She was run over by an automobile. Brought her into house, laid her on cot in living room. She just walked out to go to grocery store. Just as she opened her car door, she was hit by oncoming car. Family called doctor right away, he not arrived yet. Talk to hospital, put her in cast. She lives and comes home again.

13. MF

This girl just had her baby, family pretty poor, can't afford hospital. Have doctor come over and deliver at home. Husband sits and reads Bible to her, after birth, she asleep. He come in, puts hand over eyes, comes out, helps doctor and doctor feeds little girl, wraps her up in warm blankets and puts beside her mother. (?) Like girl is all right and so is the wife.

14.

Just daylight, fellow stayed all night in a place he never stayed before in hotel, got there late, didn't know what town looked like, never seen it before. Got up next morning without turning on light, goes over to window and looks out, and he looks for a few minutes, cleans up, leaves and goes to the next town. (?) He is a salesman going from town to town. (?) He wishes he was home with his wife and kids. At end of trip, goes home and sees wife and kids.

16.

(Long pause. After three minutes of continuous staring, the patient says that he can't make up a story. Requests that he come back to it. "I'll try to relax after being in court".)

(Later, after 30 seconds) Dog walk across street, lost, walked around for a couple or three hours, gets home. Boy he belongs to sees him, locks him up in back yard and goes to bed. That's all. (?) Just a dog, a hound.

17. BM

Looks like some guy fell off side, climb off

a ship, climb hand over hand and get down and he can go ashore. He gets down to boat and goes ashore. He comes back, starts up ship and go on their way. (?) Just so he get on boat. (?) Just stepped, he went ashore. (?) Just a seaman. (?) So get down in boat. Don't have a ladder.

18. BM

Some drunk been arrested and cops take over to paddy wagon. Someone took a flash picture as they haul him in. New Year's Eve, got drunk, taken down to jail. Released the next day and on his way. (?) Just went out to party on New Year's Eve. (?) Drunk, disturbed peace, too drunk to go home by himself. (?) He sobered up next day and they released him. (?) Wasn't hurting anything. Just walked down street like rest of them and cops got. (?) Maybe drunker one of bunch.

19.

Looks like picture of modern art. Guy hung up in art gallery for everyone to view, looks like something might use on Halloween spook show. Guy hangs up, doesn't win any prizes, take down and covers it up. Reason there he was a student of art at some University and this is what he entered. (?) Nothing, just modern art. (?) Don't know, this one I can't understand.

20.

Cops stand under street light, foggy night, pounding beat, stand under light, makes his calls every hour and smokes cigarettes, waits for relief, relieved at midnight and goes home. (?) Just walk up and down street. (?) Suburban area. (?) Nothing happens.

4. (Repeated)

I don't know what I did on it? Looks like someone have argument with wife and he starts to leave house and she stops him, talk it over and end argument and everything like it was before. (?) About who dented the fender on the car. So finally decided it might have happened in parking lot and just forget about whole thing. (?) Maybe he just mad, that's all. (?) She didn't want him to realize not either fault and want to talk it over.

Well, shit, I don't know, I don't know why. Saw it just there — like someone real smart would figure out the why part of it.

SACHS SENTENCE COMPLETION

I. Attitude Toward Mother.

14. My mother is dead

29. My mother and I had long talk together

44. I think that most mothers have a more beautiful look

59. I like my mother but now she is gone

II. *Attitude Toward Father.*

- 1. I feel that my father *was nice*
- 16. If my father would only *have lived*
- 31. I wish my father *were alive*
- 46. I feel that my father is *dead*

III. *Attitude Toward Family Unit.*

- 12. Compared with most families, mine is *wonderful*
- 27. My family treats me like *the best*
- 42. Most families I know are *very nice*
- 57. When I was a child, my family *didn't live together*

IV. *Attitude Toward Women.*

- 10. My idea of a perfect woman *my wife*
- 25. I think most girls are *nice*
- 40. I believe most women are *nice*
- 55. What I like least about women is *their gossip*

V. *Attitude Toward Heterosexual Relationships.*

- 11. When I see a man and a woman together I *wonder if they are married.*
- 26. My feeling about married life is *wonderful*
- 41. If I had sex relations I *would relax*
- 56. My sex life is *normal*

VI. *Attitude Toward Friends and Acquaintance.*

- 8. I feel that a real friend is *one who will help you*
- 23. I don't like people who are *noisy*
- 38. The people I like best are *quiet*
- 53. When I'm not around, my friends *I feel lonesome*

VII. *Attitude Towards Superiors At Work or School*

- 6. The men over me are *large*
- 21. In school, my teachers *nice*
- 36. When I see the boss coming I *try to remember what I have to ask him*
- 51. People whom I consider my superiors are those whom I *take orders from*

VIII. *Attitude Toward People Supervised.*

- 4. If I were in charge things *would be different*
- 19. If people work for me I *try to go half way*
- 34. The people who work for me are all *good workers*
- 48. In giving orders to others, I *always ask rather than tell*

IX. *Attitude Toward Colleagues At Work or School.*

- 13. At work I get along best with *(not answered)*

- 28. Those I work with are *quiet people*
- 43. I like working people who are *quiet and sincere*
- 58. People who work with me usually *like me*

X. *Fears.*

- 7. I know it is silly but I am afraid of *life*
- 22. Most of my friends don't know that I am afraid of *not being able to dance*
- 37. I wish I could lose the fear of *what people think*
- 52. My fears sometimes force me to go *where it is quiet*

XI. *Guilt Feelings.*

- 15. I would do anything to forget the time I *lied to my wife*
- 30. My greatest mistake was *lying to my wife*
- 45. When I was younger, I felt guilty about *not having anything to say*
- 60. The worst thing I ever did *was lie to my wife*

XII. *Attitude Toward Own Abilities.*

- 2. When the odds are against me I *get help*
- 17. I believe that I have the ability to *do anything*
- 32. My greatest weakness is *being afraid of criticism*
- 47. When luck turns against me I *accept it as life*

XIII. *Attitude Toward Past.*

- 9. When I was a child I *was away from my mother*
- 24. Before the war, I *was a boy or child*
- 39. If I were young again I *would grow old*
- 54. My most vivid childhood memory is *a movie*

XIV. *Attitude Toward Future.*

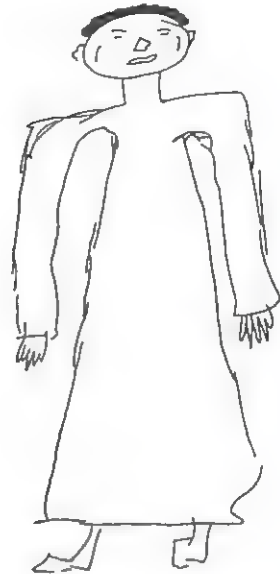
- 5. To me the future looks *cloudy*
- 20. I look forward to *seeing my wife*
- 35. Some day I *will be home*
- 50. When I am older I *will remember my younger life*

XV. *Goals.*

- 3. I always wanted to *be able to play the piano*
- 18. I could be perfectly happy if my wife *were here*
- 33. My secret ambition in life is *to play piano*
- 49. What I want most out of life is *to be able to be with my wife*



DRAWN FIRST



DRAWN SECOND

A. Ego Control and Diagnostic considerations.

A degree of variability in the quality of the patient's conceptualization was noted throughout all of the tests. His verbalizations were brief and concise, but with gaps in continuity, as particularly noted on the TAT. On the WAIS, there was occasional but conspicuous intra-test shifting in the quality of his reasoning. Not only would he miss easy items and succeed at more difficult ones, but these easy misses tended to be somewhat concrete and personalized. Shifting from an adequate abstract conceptual level to a concrete and functional one was also a conspicuous feature of the Sorting test. A similar trend was also noted on the word association test.

However, the Rorschach protocol most clearly exemplified this trend and here it reached proportions of rather autistic thinking and had a definite quality of regressive distortion of reality. His sequence was orderly and almost rigid. There was no card turning and with few exceptions his form was precise and accurate as

far as the individual elements of the responses were concerned. However, as he continued in the task, there was an increasing tendency to combine precisely perceived elements into illogical combinations.

This tendency was noted on the early cards in such responses as "two dancers with a big bow tie between them" (Card III), and "a donkey with two people lying on boards beside him" (Card V). On the last three color cards, this trend became quite pronounced, culminating in combinations so arbitrary as to be scored minus. In fact, all of his minus form responses occurred on the latter three cards and all involved this type of distorted logic. Examples were the responses to Card VIII of the frog with pincers for a head; to Card IX, of a man with a turban looking through a fish bowl and grasping flowers below it; to Card X, of sea-horses riding each other and carrying a torch and, also to Card X, of the dog with its heart showing.

The patient's initial response to color was very impulsive and blatant-

ly hostile and destructive. However, after this first rather direct expression of uncontrolled affect, it appeared that attempts at intellectual control of his angry impulses came into play. It seemed possible that in his extreme effort to control his destructive feelings, the rather regressive distortions of logic ensued, as evidenced by his arbitrary combinations to the later color stimuli. It appeared that under stress he tended to fall back on rather primitive reasoning and to show considerably weakened reality-testing.

There appeared to be a definite potential in this patient for primitive, regressive and unrealistic thinking, which became particularly evident when he was under emotional pressure. While there was considerable ability and effort to control this, nonetheless, on occasion, control was overridden. Thinking disorder, with little decompensation and substantial capacity for recovery, was indicated at the time of the examination. Diagnostically, it was felt that while there definitely was a potential for psychosis, he was not blatantly psychotic. Borderline schizophrenia or early well-compensated schizophrenia appeared to the examiner to account most adequately for his test responses. His Rorschach responses were in many ways consistent with the pattern of a group of murders previously reported by Kahn (1959).

B. Affects, Conflicts and Dynamics.

The patient's intense hostility was very prominent in the thematic content of the Rorschach and in his TAT themes. Both sadistic and masochistic fantasies were evident. Almost forty percent of his Rorschach responses had sadistic or masochistic content in terms of Schafer's thematic analysis (1954). His several Rorschach responses of animals crashing into immovable objects, such as the cat smashed flat into a tree (Card VI) and the two horses smashing together (Card IX), were indicative of the prominent attacking themes, with self-

destructive consequences. On the TAT, this was evidenced in stories of individuals who had been badly hurt in accidents, and perhaps particularly in the story of the man having an operation without anesthesia.

His struggles to control his hostile impulses and fantasies have already been noted. In some instances, in addition, he appeared to retreat from hostile expressions to a somewhat more passive attitude. It was quite striking on the TAT that he expressed rather tender, compassionate affect for people who had been hurt and injured. This perhaps represented some form of reaction formation to his hostility and also, perhaps, some identification with those who had been hurt and injured. In this respect, it might be speculated that in physically harming his mother, it was possible for some tender, close feeling relationship to be expressed and felt.

Related to his preoccupation with hurting and being hurt was the very prominent emphasis and anxious concern with impaired body image clearly indicated on the Rorschach. This concern suggested considerable anxiety about his own masculine integrity. His Rorschach responses to Card VI, "a giant with crippled, deformed hands", and to Card V, "people with deformed legs", along with many other responses of severe body damage are indicative of this concern. Again, on the TAT, the emphasis on injured and damaged people was quite consistent. The anxiety and threat about his masculinity may certainly have been accentuated by his recent sterilization. While this operation possibly was more a symptom than a cause of his concern about his masculinity, it undoubtedly served to increase his doubts and concerns in this area and to weaken further his available ego-strength and control.

While there is little evidence regarding the dynamics of his concern about masculinity, there is some hint of the oedipal relationship being an unresolved and particularly sensitive

one for him. This is based primarily upon his strong angry and anxious response to the fourth TAT card. His first story here was that of a man who was held by and submitted to one woman when really wanting to leave her for another. Along this line, the one story concerning the shooting of the father and the operation would be consistent, (Card 8).

Another important element appeared to be the superficially paradoxical strong feeling of almost reverence and tender, compassionate respect for motherhood. This was suggested by his soft, almost reverent, voice when telling these stories, such as the one to Card 13 on the TAT. Other examples were his responses on the Sentence Completion Test, such as "most mothers . . . have a more beautiful look". A very close and dependent, as well as very tender feeling toward the wife was suggested. On the Sentence Completion he stated "my idea of a perfect woman . . . my wife". It might be speculated that in some ways, his wife was for him a good woman and good mother figure, whereas his actual mother represented and was the focus of all the deprivation and anger he had about maternal treatment he had received in the past. He stressed his preference for honest, sincere people and indicated guilt about lying to his wife, perhaps suggesting much guilt in relationship to the good mother figure.

Another rather prominent theme throughout the Rorschach and TAT was the emphasis upon looking and upon being seen. It was felt that, in part, this reflected his guilt, which was often projected. It also appeared to reflect certain narcissistic and perhaps exhibitionistic needs on his part. In addition, this emphasis may have been accentuated by the very great notoriety he was receiving at the time. Nonetheless, it was such a prominent theme throughout his test, and occurred so often in connection with his more regressive responses, that it is felt that

perhaps considerable dynamic meaning is involved. However, there was little in the history or the tests to indicate what this factor might have really meant to him.

While the kinds of dynamic factors discussed here may help us in retrospect to understand, to a degree, this man's destructive act, it is felt that they would hardly have led one to predict the specific nature of the crime. Certainly he appeared to show an intense hostility which could be expressed impulsively. In addition, regressive distortion of reality occurred, possibly in relationship to his attempts to avoid and control his destructive feelings. However, there appeared to be as much indication of self-destructiveness in his record, as there was of a tendency to act out toward others. His very manner of committing the crime left an easily followed trail and, hence, led to self-destructive punishment. In this connection, his response to Rorschach Card VIII, of the animals leaving red foot prints (his guilty bloody trail) seemed relevant. However, his control as manifested in this protocol did not appear so badly impaired as to indicate that he had more than a potential for acting out. That his mother again deserted him by going away, once more arousing intense frustration and rage in his need for tender, loving mothering seemed to be the precipitating factor in his act.

C. The question of legal sanity.

In the state where the patient was tried, the criteria of legal sanity were the modified M'Naghten rules which may be reduced to the questions: At the time of the crime 1) did the accused know right from wrong, and 2) was he capable of refraining from doing the wrong.

While these questions apparently have some useful meaning to society at large, as represented by juries, lawyers and judges, they are very rather obscure and not too relevant ques-

tions from the standpoint of the clinical evaluation of an individual. Many discussions of the complicated issues involved here have been presented, among others, Board (1956) Macdonald (1958) and Zilboorg (1954), and the problem will not be gone into further here.

Ultimately, juries make the decisions of legal sanity. Psychological tests can provide certain useful information about the patient to help those responsible for making the decision, but there are several important limitations to test data. Test findings give information as to what the patient was like at the time of testing, and only by inference can judgements be made about what he might have been like at the time of the crime. In addition, many other types of information, such as the subject's history and the circumstances surrounding the crime, need to be known.

However, from the psychological tests on the patient being considered here, certain data were obtained which could provide useful information for those determining his legal sanity. Bearing on the question of knowing right from wrong were the findings that he had average intellectual functioning and no gross distortions of reasoning in the intellectual test tasks, that he has adequate social knowledge, and that he appeared to feel guilty about his behavior. On the question of being able to refrain from the wrong, the relevant findings from the tests appeared to be that while he was definitely impulsive and regressive distortions of logic occasionally occurred, no consistent and severe decompensation or complete overwhelming of the ego was present. Much of the other test information was relevant in helping to understand what sort of a person the patient was, but had little direct bearing on the issue of legal sanity.

D. The issue of simulation or malingering.

One month after his return to jail

from his stay in the hospital for evaluation, the patient was returned following a suicidal gesture. He admitted to the psychiatrist that he had faked this attempt when he realized that he might be found guilty and not get off by reason of legal insanity.

At this time he also said that he had attempted to fake the responses to the psychological test. Although this is always a point seriously considered in anyone being evaluated for legal insanity, the examiner had no impression of attempts at simulating insanity on the test. It appeared that some of his less adequate responses did not always follow very consistently. Still the quality and variability of his responses were such as to suggest the possibility that even if he were trying very cleverly to appear emotionally disturbed, this did not rule out the possibility that he was, in fact, disturbed.

SUMMARY

A psychological test evaluation of an individual who blew up an airliner killing forty-four persons, in order to kill his mother, was presented. His history was one of affectional rejection by his mother and absence of his father, with neurotic and delinquent behavior in childhood and in adolescence. He emerged in the testing as an individual with intense hostility which occasionally was impulsively expressed. At other times, efforts at control were suggested, but these often led to regressive distortions of reality. He revealed much guilt and self-destructive impulses, as well as outwardly directed hostility. Great anxiety about his physical intactness and masculinity was indicated, a condition probably accentuated by recent sterilization.

Somewhat paradoxically, despite his anger, the patient was capable of tender, compassionate feelings, particularly toward the hurt and the injured. Very reverent and tender feelings toward the mother figure were exhib-

ited. Her leaving was probably viewed as another rejection and resulted in his acting out his anger for all the lack of maternal affection he felt since his early childhood. Diagnostically, he appeared from the test data to be potentially schizophrenic but well compensated, and it did not appear that his pathology met the criteria for legal insanity. While it appeared possible to understand in retrospect why he committed the act, it did not seem that this could have been predicted from the test data. Despite a statement by the patient that he had malingered on the test, little evidence to this effect was present, and it was felt that his attempts probably were in line with existing pathology.

The patient's psychiatric diagnosis was sociopathic character — legally

sane. He was found guilty of murder, adamantly refused appeal, and was executed.

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An Interpersonal Conception of Rorschach Human Movement and Delusional Content¹

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In a theoretical consideration of the Rorschach human movement response (*M*), the present author (King, 1958) offered the following (perhaps fanciful) interpretation: *M* reflects the ability in fantasy to project the self into time and space in the interpersonal sphere. This frame of reference led to the formulation of four hypotheses concerning the "functional" neuropsychiatric patient's orientation to his problem (illness). For example, one of the hypotheses was that high-*M* producers show a greater tendency to recognize their problems as involving disturbances in interpersonal relationships than low-*M* producers. When subjected to empirical test, all four hypotheses were confirmed or strongly supported.

The available research and theoretical reports were surveyed and evaluated in the process of evolving this notion of *M*. Studies (e.g., Beck, 1938; Rickers-Ovsiankina, 1938; Thomas, 1955) indicating a relatively high number of *M* responses for paranoid schizophrenics, in comparison with other schizophrenics, were viewed as yielding compatible data in that the principal characteristic of this diagnostic category is a rich (albeit inaccurate) fantasy life involving people. One of the assumptions here is that the delusional systems of paranoid schizophrenics are interpersonal in nature. Actually, while interpersonal delusions (e.g., delusions of persecution and grandeur) are undoubtedly the most prevalent, there are exceptions—some paranoid schizophrenics display somatic delusions. According to the proposed theoretical

orientation, high *M* should not be associated with this pattern of adjustment. The paranoid schizophrenic with somatic delusions does not project the self into the interpersonal sphere. In fact, the following statements suggest that the somatic paranoid reaction can practically serve as a prototype for low *M*: "Hence, it would be expected that a low amount of *M* produced by an individual who is mentally ill to be associated with a tendency for the perception of the illness to be more localized or restricted to the self. Such an individual would be more apt to see his problem in terms of somatic complaints . . ." (King, 1958, p. 5).

In attempting to clarify a minor theoretical issue concerning the relationship between *M* and delusional content, the preceding discussion ended with a hypothetical formulation. The present study was concerned with testing this formulation. Stated formally, the hypothesis is as follows: *paranoid schizophrenics with interpersonal delusions produce more M responses than paranoid schizophrenics with somatic delusions.*

METHOD

Subjects. The *Ss* consisted of 43 paranoid schizophrenics with interpersonal delusions (PID) and 19 paranoid schizophrenics with somatic delusions (PSD), all patients at a Veterans Administration neuropsychiatric hospital. Most of the PID sample was collected for other research objectives. The following persecutory thinking gives an example of one of the interpersonal delusions: "At least three undercover agents have been following me for the past year. Just as soon as they break me down and get the plans, I'm a dead

¹ The data for this study were obtained at Veterans Administration Hospital, Battle Creek, Michigan.

duck." While relatively small, the PSD sample represented all the cases of this type that could be found during a period covering slightly more than three years. The following was one of the somatic delusions: "There's no use for me to eat, the food doesn't reach my stomach. The food can't get past this block in my tube (esophagus). When I do eat, it collects here in my chest. See this lump!"

Procedure. All Ss had been or were administered the Rorschach and the Wechsler-Bellevue vocabulary subtest. Rorschach protocols with less than eight responses or the presence of "contaminating" interpersonal elements in the somatic delusions resulted in the elimination of five PSD Ss. Each of the remaining 14 PSD Ss was individually matched with a PID S for age, education, vocabulary level, and number of Rorschach responses. The matching was made without knowledge of *M* productivity. Thus, the statistical analysis was based on a relatively small number of cases, a sample of 14 pairs or 28 Ss.²

RESULTS AND DISCUSSION

An inspection of the 14 pairs of Ss revealed that the PID Ss responded with more *M* in 11 comparisons, the PSD Ss were higher once, and two comparisons resulted in ties. If the ties are *not* omitted, the PID Ss produced more *M* in 11 of the 14 comparisons. Applying the sign test (Walker & Lev, 1959) yields a *p* of .029 for a one-tailed test and a *p* of .058 for a two-tailed test.

A further exploration was conducted using group comparisons. The range for the number of *M* responses was 0 to 8 for the PID group and 0 to 2 for the PSD group, with the means being 4.1 and 0.64, respectively. It can be noted that the mean of

4.1 for the PID group is slightly higher than the 3.5 obtained in the Spiegel normal sample (Beck, *et al*, 1950). The three PSD Ss who were discarded for showing both interpersonal and somatic components in their delusional systems occupied an intermediate level between the PID and PSD groups for mean number of *M* (2.3). While only two of the PID Ss failed to give at least one *M* response, eight of the PSD Ss responded with no *M*. After the number of *M* was dichotomized between 0 and 1 (no *M* vs. *M*) and a fourfold table was constructed, Fisher's exact test (Siegel, 1956) was used. The difference between the groups was statistically significant at the .05 level for both one-tailed and two-tailed tests.

The hypothesis seems to be a tenable one: paranoid schizophrenics with interpersonal delusions produced more *M* than paranoid schizophrenics with somatic delusions. The results correspond with the observations made by Singer and Spohn: "To some extent those individuals who reported tendencies toward active fantasy lives such as heroic daydreams of reviewing of past or future plans tended to fall in the high-*M* group (while) . . . Ss who showed low-*M* production . . . reported that they tended to lose themselves in viewing television or in focusing on minute bodily changes with subsequent somatic delusions" (Singer & Spohn, 1954, p. 6). Basically, the results support the relevance of including an interpersonal component in the interpretation of *M*.

SUMMARY

The following interpretation of the Rorschach human movement (*M*) response provided the basis for the present study: the ability in fantasy to project the self into time and space in the interpersonal sphere. An examination of this interpretation suggested that number of *M* could be used to predict the nature of the delusional content in paranoid schizo-

² All final Ss had been diagnosed as schizophrenic reaction, paranoid type, except for one PSD S (schizophrenic reaction, undifferentiated type). This deviation was considered a minor one in view of the vagaries of diagnostic practice.

phrenics. The hypothesis was that paranoid schizophrenics with interpersonal delusions produce more *M* than paranoid schizophrenics with somatic delusions. The hypothesis was upheld. The results were interpreted as supporting the relevance of including an interpersonal component in the interpretation of *M*.

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Stimulus Value of Rorschach Inkblots Expressed As Trait and Affective Characteristics¹

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The traditional method of Rorschach interpretation has consisted of the evaluation of the formal and structural characteristics of perception and the relating of these characteristics to personality functioning. Extensive normative data dealing with various aspects of the subject's response to the perceptual task have been collected. Most extensively dealt with have been location of response, determinants, reaction time, form quality, generic class and frequency of content (Baughman 1958.) These normative data and identifiable patterns of deviation therefrom have provided a basis for developing sets of assumptions about diagnostic implications of disruptions in the response process and of various other deviant trends.

As interest has developed in more fully elaborated interpretations of affect, psychosexual status, preoccupying conflicts, and defense processes, certain assumptions have been characteristically made about the stimulus value of the blots as a whole (Bochner & Halpern, 1945; Phillips & Smith, 1953; Klopfer *et al*, 1954). Some of these assumptions have to do with the affective impact from the total configuration rather than any single aspect or discrete stimulus property although some aspect or aspects of the configuration may be dominant.

This study contributes to the development of normative data for the stimulus value of each card in terms of descriptively articulated feelings. A subject's adjectival descriptions of a blot were considered an appropriate index of feeling.

In a pilot study, two groups of subjects consisting of college students were asked to give the traits or adjectives which they felt best described the feeling they had about the cards. These trait descriptions were then categorized into groups on the basis of similarity of meaning. Since it has become increasingly common to use the father-mother or masculinity-femininity concept in discussing particular cards, viz., Cards I, III, IV, V, VI, and VII, further trait adjectives were culled from the Terman-Miles MF scale (1936) as well as from Allport's (1937) lists. This universe of fifty-seven trait adjectives comprised the final experimental list.

Sixty-seven students, thirty-seven female and thirty male, from adult extension and college classes in psychology comprised the research subjects. The Rorschach was presented in standard series to the groups. A reflector projection which consists of a mirror image cast upon a screen was used. From the experimental list subjects were asked to check those adjectival traits which best described their reactions and feelings about the various cards.

The total number of response-descriptions to each card was examined. The rank order from greatest number of responses to least was as follows: Card IV, Card X, Card VII, Card I, Card VIII. The following three were tied for next rank: Card III, Card IX, Card II. Cards VI and V were tied for the last rank. Although adequate norms for the average number of responses for each card were not available, the rank for the number of adjectives for each card is comparable

¹Based on a paper read at the American Orthopsychiatric Meeting, Chicago, 1955.

to the trend usually noted in the standard administration except for Card IV which is ordinarily of much lower rank. Since the rank order of the number of adjectival responses is so similar to that for responses in the standard administration it would seem that the quantity of responding evoked is related to the stimulus value of the various cards.

In determining the importance of an adjective for any card it was assumed that it should be used by at least thirty per cent of the subjects. It was necessary to ascertain whether particular adjectives were used for particular cards or the same cluster of adjectives for all the cards. Thus, for an adjective to assume importance in describing a card it was necessary to weigh two factors: (1) the frequency with which the subjects used it on one card, and (2) the percentage of total usage on all cards that this frequency represented.

Two adjectives were used significantly for one card only; fifteen for two cards; nine for three; three for four cards; and one for five cards. In addition, there were thirteen adjectives which were used by at least twenty per cent of the subjects, but their appearance represented almost the entire use in the total series of cards of that adjective. A total of forty-three of the fifty-seven adjectives were used for the various clusters, and thirty of these forty-three were used specifically for only one or two cards. It would appear that the subjects were provided with an adequate range for responding and that a discriminative and selective process was operating.

In the presentation (see Table I) and discussion of the adjectival trait clusters around each card, the designations of (1) *unique* (2) *common* and (3) *specific* are used. Unique refers to adjectives which are used with great frequency for a particular card when this frequency represents a high proportion of the use of this adjective in all the cards. This category consists

of adjectives used by at least sixty per cent of the subjects on a particular card and this frequency had to be at least thirty per cent of its use on all cards. A unique adjective clearly delineates the most prominent attribute of a card. Common pertains to adjectives which are used by a significant number of subjects, but whose usage is widespread throughout the cards. This category represents adjectives used by at least thirty per cent of the subjects on a particular card. A common adjective reflects an important attribute of a card, but possibly only one of a variety of meanings. Specific refers to adjectives used by a limited number of subjects when this usage is generally restricted to a particular card. This category represents adjectives used by at least twenty per cent of the subjects when this frequency represented thirty per cent of its use on all cards. A specific adjective reflects an important attribute, the import of which can be clarified by considering the cluster around the card.

In a psychodynamic understanding of an association the total context should be considered. This also applies to Rorschach responses. The total context is represented by the formal characteristics as well as other aspects of the stimulus value of the specific card to which the response is given. Assumptions about the stimulus value have emanated from empirical observation of response data together with life-history and clinical material. Formulations, as usually stated, are for each card as a whole with specific references to discrete areas that are assumed to contribute a specific element to the more global import. These formulations are presented with the normative data with an indication of its relevance to the formulations.

TABLE I

Card I presents a new and relatively unstructured situation. Perceptually, it consists of a large dark mass.

TABLE I. Traits Selected as Descriptive of Rorschach Cards

	I	II	III	IV	V	VI	VII	VIII	IX	X
Weird	U							C		
Threatening	U			C						
Gloomy	U			C	S					
Mystical	S								S	
Monstrous	S			U						
Domineering	S									
Aggressive	S			C						
Cute		U					C			
Comical		U	C							
Happy		C	C							C
Affectionate		C					C			
Sweet		C					C			
Agreeable		C	C				C			C
Social		C	C				C			
Artistic			C				C			C
Masculine			C	C		C	C	C	C	
Feminine			C				U			
Absurd		S		S						
Spontaneous			S							C
Argumentative			S							
Ugly	C			U	C					
Evil	C			C						
Morbid	C			C						
Disgust				C						
Fear	C			C	S			S		
Strength				C						
Anger				S						
Austere				S						
Delicate						S				C
Sensitive					C		U	C		
Apprehensive					C		S			
Apathetic					C			S		
Awed					S					
Ambivalent						S				
Tender						S				
Creative							C			C
Pretty							C		C	U
Sentimental							S	S		
Attractive							S			S
Abstract								C	C	C
Adventurous								C		
Tension								S	S	
Introspective								S		S

Key: U—Unique (selection by >60% of subjects; >30% use unique to this card.)
S—Specific (selection by >20% of subjects; >30% use unique to this card.)
C—Common (selection by >30% of subjects; <30% use unique to this card.)

Aberrant responding has been related to reactions to a punitive rejecting mother and/or an unresolved intense relationship with her. A more general statement has asserted only that failure represents difficulty in accepting female figures.

The unique adjectives were "weird," "threatening" and "gloomy"; the common adjectival traits were "evil," "morbid," "fear" and "ugly"; the specific adjectives were "mystical,"

"monstrous," "domineering" and "aggressive."

In relating these adjectives to the interpretive hypothesis advanced it is evident that the card elicits reactions having to do with punitiveness, aggressiveness, and depressive mood.

Card II introduces affective loading in the form of color. It also presents areas with specific sexual significance and areas which are popularly interpreted as animals in action. Re-

sponses to this card have been related to the individual's characteristic mode of handling sexual and aggressive impulses and have been considered pertinent to the assessment of control.

The unique adjectives are "cute" and "comical"; common adjectives are "happy," "affectionate," "sweet," "agreeable" and "social"; "absurd" was specific.

The general feeling tone of these adjectives indicates that this card is perceived as a pleasant affective experience. Therefore, difficulty with it is indicative of strong disruptive anxiety.

Card III also introduces colored areas and is assumed to provide an opportunity to observe ability to adapt after dealing with the affective arousal of the previous card. There are two popular human figures and responses involving these areas have been interpretatively related to identification and role as well as the method of forming relationships.

There were no unique adjectives; the common adjectives were "social," "agreeable," "happy," "comical," "artistic," "masculine" and "feminine." "Spontaneous" and "argumentative" are specific to this card.

These adjectives point up the spontaneous interaction, masculinity and femininity and the pleasantness of affect.

Card IV is often referred to as the "father" card and has been used to assess reactions around authority figures. It has a heavy dark quality and introduces more pronounced shading than the previous cards. It also has several areas frequently associated with specific sexuality.

The unique adjectives are "ugly" and "monstrous"; the common adjectives are "threatening," "evil," "gloomy," "morbid," "disgust," "fear," "masculine," "aggressive," and "strength." Specific adjectives are "anger," "austere," and "absurd."

The descriptions highlight the masculine and aggressive qualities of the card. There is also indication of un-

pleasant, depressive reactions.

The stimulus on *Card V* is an intensive and massed black color. Despite this, it is found to be an easy card to handle in terms of popular responding. It is another instance in the card series where it has been assumed that affect and sexual identification may be assessed.

There were no unique adjectives; common ones are "delicate," "sensitive," "apprehensive," "ugly"; "gloomy," "evil," "apathetic," and "fear" are specific for this card.

It elicits adjectival traits of an unpleasant quality but without the uniqueness or range observed on *Cards I* and *IV*.

Card VI has two large perceptually discrete areas, one phallic-like, one vaginal-like, which elicit sexual associations. It also has marked shading nuances. It has been used to evaluate psychosexual adjustment specifically at a heterosexual level.

There are no unique adjectival traits, the only common one is "masculine." Specific ones are "austere," "awed," and "ambivalent."

The meager responses would appear to indicate that this is a difficult card. In general, the responses relate to masculine sexuality. There is also a residual of sexual ambivalence. It would appear that difficulty with this card may not be as significant as difficulty with similar areas in other cards.

Card VII has been called the "mother" card. It has many aspects associated with femininity. It has been used to assess the emotional security associated with the mother image. It has also been used for an assessment of social development.

Unique adjectival traits are "feminine," and "delicate." Common are "sweet," "cute," "tender," "creative," "happy," "agreeable," "affectionate," "social," and "artistic." Specific are "sensitive," "pretty" and "sentimental."

These highlight the soft feminine qualities. This strongly indicates that

anxiety reactions around this card should be considered highly significant.

Card VIII is the first totally chromatic card. It has been used to evaluate affective tone. It has two prominent popular animal figures and the description and the identification of these animals have been assumed to give information about the subject's attitude toward the world. There are no unique adjectives; common adjectival traits used are "attractive," "weird," "artistic," "delicate," and "abstract." The specific adjectives are "adventurous," "pretty," "apprehensive," "tension," and "disgust."

The intermingling of many pleasantly and unpleasantly toned descriptions suggests that responding to this card is not difficult, but that it can produce stress. There are also some reactions which apparently relate to the usual movement quality of the figures.

Card IX presents complex color and shading stimuli and does not provide an abundance of common percepts. It is ordinarily considered to represent the greatest affective challenge in the blot series. There are no unique adjectives; the common adjectives are "attractive," "artistic," and "creative." Specific are "adventurous" and "mystical."

Though the feeling tone of the response is not threatening, the challenge it presents is seen in the small number of adjectives used.

Card X has been assumed to provide indication of recovery from the stimulus of the previous card and, hence, relevant to the evaluation of control. It has been also considered relevant to the assessment of initiative, spontaneity, and flexibility of the subject.

The only unique adjectival trait is "pretty." The common ones are "creative," "artistic," "spontaneous," "happy," "delicate," "abstract," and "agreeable." The specific are "attractive," and "introspective."

This card has a high number of

responses and the feeling tones are pleasant. This may be considered a card that is easy to handle and, hence, disruption around it is highly significant.

SUMMARY AND DISCUSSION

Certain assumptions about the stimulus value of the various Rorschach cards are necessary for a psychodynamic interpretation. These assumptions have emanated from empirical observation of response data together with life-history and clinical material.

The data of this study represent the conscious, articulated feeling and attitudes of a group of non-clinical subjects about each of the cards. This set of cognitive articulations should provide a more systematic basis for evaluation or development of assumptions concerning the stimulus value of the cards.

Card I elicits reactions having to do with punitiveness, aggressiveness and depressive feeling. *Card II* is perceived as a pleasant affective experience. *Card III* points up spontaneous interaction, masculinity and femininity and pleasantness of affect. *Card IV* highlights masculine and aggressive qualities as well as unpleasant, depressive feeling. *Card V* elicits reactions of an unpleasant quality, but without the uniqueness or range of *Cards I* and *IV*. Responses to *Card VI* relate to masculine sexuality though there is a residual of sexual ambivalence. Minimal responding indicates the difficulty that this card ordinarily presents. *Card VII* highlights a variety of soft feminine qualities. *Card VIII* evokes responses with an emphasis on pleasant affective tone, but intermingled with some unpleasant feelings. *Card IV* evokes pleasant feeling although the minimal number of responses indicates the difficulty that this card presents. *Card X*, evoking the widest range of pleasant feeling tones, would appear to be the easiest card.

Cards I, IV, V as a group have been used to assess mood. Our data indi-

cates that they do evoke the more dysphoric attitudes; Cards I and IV with a greater intensity than V. Not only do they evoke a greater number of such reactions but these are used with greater frequency than on V.

The responses to Cards VIII, IX, X have been used to evaluate the way the subject handles the emotional impact of the environment as well as his responsivity to it. The prevailing tone of the descriptive responses obtained indicates a pleasant affective experience. Difficulty or unpleasant affective response to these cards would appear to be of outstanding significance.

Responses to Cards I, V, and VII have been used to evaluate reactions to femininity and often have been specifically related to mother, while Cards III, IV, VI have been used to evaluate reactions around masculinity.

Card I has a large center detail which is commonly seen as a female figure. The responses obtained tend to highlight the threatening, non-supportive aspects of reactions to the female content. Card VII highlights soft, feminine qualities. Card V elicits predominantly unpleasant responses but also some pleasant ones; it does not evoke these with the frequency or range of I or VII. Card III evokes masculine and feminine adjectives. Card IV evokes the more overwhelming aspects of masculine aggressiveness. Card VI evokes responses consistent with the sterner aspects of masculinity. As a group they appear to get at different aspects of masculinity.

It seems evident that there is differential responding to the various cards in terms of the affective experience which they initiate and, further, that the differential responses are closely related to the types of formulations offered for the individual cards. For example, those cards assumed to evoke attitudes concerning masculinity or femininity elicit adjective clusters which are closely within this frame of reference.

The findings also suggest reformulations and elaborations of the usual

assumptions to be necessary for more discriminating clinical interpretations. For example, the assumptions relating to Card I involve its representational value as a female or mother figure, its intense achromatic stimulus, and the newness of the situation established by its ordinal position in the series. These assumptions derive from observations concerning difficulties in responding and the most typical ways of responding. If, however, one attempts to formulate assumptions in terms of what takes place perceptually in the light of psychodynamic theory, the interpretative possibilities are increased in scope and depth. The implications may be noted in the following example: A thirty-nine year old married woman who sought psychiatric help because of frigidity responded to Card I in two seconds by saying, "This I love"; and laughing. Then at fifteen seconds said: "I don't know what it looks like; a couple of men climbing a pole. Am I supposed to see something else?" When the examiner asked if she did she responded, "No." Inquiry established the response as a well-organized Whole with the central detail as a pole and the side details as men climbing. Further questions elicited an accounting for the head, hands, and feet of the men and their capes flying.

During a long period of intensive therapy both her aversion towards and competitiveness with men as classic feminine protest became explicit. Late in treatment she was able to verbalize vaguely that her major problem was "something is missing down below" which eventuated in conscious articulation of explicit penis envy.

We noted above that Card I elicited adjectives that dealt with depressive moods. Her initial rapid response to this card with the comment "This I love" was followed by a denial that she could give a percept; nevertheless, at the same time she offered one highly invested with personal meaning. In therapy, while denying any

overt anxiety she would proceed to elaborate torments she had experienced since the previous appointment.

Despite the formal adequacy of the percept as a response to this card, it is clear how the imagery of the contentual material relates to her personality. In extending the basic assumption concerning the stimulus value of the card, one clearly sees that the reaction conveys far more than her relationship to her mother. An area commonly seen as female was perceived as a masculine symbol and the center of masculine exertion. This clearly relates to her own competitive relationship to men and penis envy rather than an image of the mother. Clinical data confirmed interpretations made about this woman originally on the basis of test responses alone. A formulation of assumptions in terms of more general statements about femininity would make it possible to deal with the nuances of the perceptual process of any specific individual.

The normative data obtained through this study represents some of the more clear-cut reactions to the various cards in terms of affective stimulus value. Responses obtained in standard Rorschach procedure may be more meaningfully understood when related to this consensus around the demand quality of the blots.

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Rotation and Reliability of the Rorschach¹

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In the earliest reported study of Rorschach split-half reliability correlations, Vernon (1933) obtained relatively low correlations for all scores but R. He observed, however, that as the number of responses increased, the reliabilities improved. He suggested that a parallel series of tests be administered to subjects giving fewer than 30 responses and concluded that "We cannot expect a diagnosis that is based on, say, less than 30 responses to possess any good validity." Subsequent split-half reliability studies yielded results substantially similar to those reported by Vernon (Hertz 1951, Orange 1953, Thornton & Guilford 1936, Wirt & McReynolds 1953). Because of the disappointingly low reliability correlations for most Rorschach scores, Hertz (1951) in a review of the literature, concluded that the split-half method was "inapplicable to Rorschach data and generally unsuccessful;" that the test could not be split into halves; and that "no adequate statistical procedure" was available to measure the reliability of Rorschach scores. Other reviews (Cronbach 1949, Zubin 1954) indicate that this opinion is widely held.

The specific background of this study was the problem of insufficient Rorschach responses and the questionable validity of any diagnostic formulation based on such "impoverished" records. Similar to Vernon (1933), McFarlane and Tuddenham (1951) asked whether "a protocol is a sufficiently extensive sampling of the subject's personality to warrant formulating judgments about it". Pertinent to this question Kaplan and Berger (1956) employed the novel

technique of three repeated administrations of the Rorschach at intervals of four days with the request to give only new and different responses. On the three repeated tests they obtained an average of 68.6 new responses compared with an average of 34 original responses. Although they noted a "considerable amount of relationship" for specific Rorschach scores between the initial and subsequent administrations, they concluded that a "single Rorschach performance cannot be regarded as adequate, stable or complete representation of the personality characteristics which the Rorschach is able to describe."

While working with a group of rheumatoid arthritics, it seemed that their varying degrees of physical disability inhibited or prevented the spontaneous turning of cards and possibly reduced their productivity. This speculation led to a fundamental doubt about equality of test administration for the individual who does not turn cards and for the one who does.

The instructions with the Klopfer method of administration are silent on the question of turning. Some individuals interpret this as freedom to turn, others do not. Although this difference in interpretation of the instructions is clinically important, it does not negate the fact that the test stimuli are different following upon the subject's interpretation of the instructions. Although it is correct to compare individuals with regard to their handling of the omitted reference to turning and draw legitimate conclusions with regard to the consequence of such understanding of instructions, it does not appear to be correct to also compare them on their differing response patterns to differences in completeness of test stimuli.

¹ Part of this study was read as a paper at a meeting of the Eastern Psychological Association in New York City on April 12, 1957.

Without question, the above reasoning is open to some argument but it was this line of thinking that led to experimentation with various methods to equalize the test stimuli. A technique was devised, where, if the subject could not or did not turn the cards, the examiner did so during the Inquiry and asked if anything else was seen. This Rotation by Examiner technique (hereafter referred to as R.B.E.) was not only applicable to those physically incapacitated but it also elicited further responses from those able to turn but who spontaneously turned none or less than all 10 cards. In initial exploratory use it produced about a one-third increase in R from a sizable group of rheumatoids regardless of whether the patient could or could not turn the cards. This suggested the possibility of determining whether the increased productivity resulted in an improvement in the reliability of scores. From the pre-experimentation experience in employing this method of administration, it seemed to the author that the R.B.E. technique was only a moderate, additional demand upon the patient's resources and, in some basic respects, a rather supportive procedure; and that a failure of the reliability correlations to improve with the additional responses could only be ascribed to an instability of the Rorschach scores. This pre-judgment may also be open to some argument but is stated primarily for the record.

SUBJECTS, PROCEDURE AND HYPOTHESES

The subjects employed for this experiment were being seen for a concomitant study comparing rheumatoid arthritic patients with a control population having similar, physically disabling illnesses. The intention was to provide a pool of subjects from which arthritics could be matched against an equal number of controls. Forty-seven subjects came from one municipal hospital primarily treating chronic diseases. The remaining 6 subjects came from another hospital, two

arthritis clinics, and a rehabilitation center. The total tested population consisted of 22 rheumatoids and 31 controls having poliomyelitis, muscular dystrophy, transverse myelitis, syringomyelia, etc. In several cases patients having certain illnesses initially considered as possible controls (multiple sclerosis, Huntington's chorea, etc.) were later rejected from the arthritis study, but these were adequate subjects for the purpose of this experiment and were therefore included. There were 27 men and 26 women ranging in age from 15 to 65, with an average age of 40.5 years.

In most cases the patient with arthritis was approached directly and asked to participate in a study of his illness. In the case of the control, he was asked to participate in a study comparing arthritis with an illness such as his own. In the remainder of the cases, the patient was approached by the author and ward physician, again with the same type of request. In all cases the patient was reassured about the confidential nature of the material. About a half dozen patients refused to cooperate.

With one exception the procedure employed was the Klopfer and Kelley (1946) administration for the Performance Proper. If the subject asked about turning the cards or indicated this question through any motion, he was told that he could turn the cards if he wished to. The Inquiry was conducted for Card I in the usual manner. If the subject had turned Card I to all of the other three positions ($>V<$), the examiner went on to card II. If he had turned to only some of the positions, he was asked to turn the card to those positions he had not previously looked at and asked if anything else came to mind. If, as was the usual case, the subject had turned some of the later cards but not Card I, he was reminded that he had turned some of the later cards but not this one and was asked to turn to all of the other 3 positions and tell the examiner if anything else came to

mind. In those cases where none of the cards had been turned, the subject was told that, since other people often turn the cards, the examiner wanted him to have the same opportunity as the others and to tell the examiner if anything else came to mind.² In most cases the examiner demonstrated the turning procedure on the first card of the Inquiry. Throughout the remainder of the test, the subject was reminded to turn the cards to those positions he had not already looked at and to give any response that came to mind. The essence of the communication with regard to rotation is described above although the precise phrasing varied somewhat from subject to subject, depending upon the particular circumstances of the test situation.

Nine of the patients were physically unable to turn the cards and they responded to them in the usual position. In only one case, on Card VIII, the patient turned her head in such a manner as to indicate a wish to have the card turned. After turning this card for her to the desired position, there was no further indication that she wished the cards turned during the remainder of the Performance Proper. For these physically disabled subjects, the examiner turned all the cards to all the positions, instead of requesting the subject to turn them.

All responses given in the Performance Proper, as well as any "additional" responses given to card positions turned to the Performance Proper were considered Usual responses. Those responses given to the card positions that had not been turned to the Performance Proper were considered R.B.E. responses. It should be noted that many of the "addition-

al" responses given seemed to be facilitated by the R.B.E. technique. On the other hand, some subjects spontaneously turn cards in the Inquiry and give occasional "additional" responses to card positions not looked at in the Performance Proper. Since there was no immediately ascertainable way of determining which ones were facilitated by the R.B.E. technique and which ones might have occurred without its use, all "additional" responses were included as Usual responses.

Responses were scored by the author in the Klopfer and Kelley (1946) manner with the following modification. In those responses where more than one determinant was elicited, instead of disregarding the so-called "additional" score for the calculation of the correlations, equal weight was given to all determinants. For example, a response with animal movement and shading was scored $\frac{1}{2}$ FM and $\frac{1}{2}$ Fc. The effect of this modification probably reduced the reliabilities of the major determinants and raised the reliabilities of the more infrequently given determinants; i.e. it probably tended to equalize the reliability correlations. However, the number of such complex determinant scores was relatively small.

The first hypothesis stated that there would be a significant improvement in the number of responses obtained from the addition of the R.B.E. technique as compared with the Usual administration. This involved a straight-forward t-test of difference.

The second hypothesis predicted an improvement in the split-half reliabilities with the R.B.E. technique. To test this, scores were converted into percentages through dividing by R for the odd and even cards ($W_{0\%}$, $D_{0\%}$, etc.). This was done for the Usual administration and then repeated for the Usual plus R.B.E. administration. Product-moment correlations were calculated between the odd and even cards for 31 scores listed on the Klopfer and Davidson Individ-

² Had the examiner employed phrasing such as "that is all up to you" in response to the subject's initial request about turning, it would have been contradictory to the later statement about having the "same opportunities" as others. Therefore, any initial questions about turning were answered with reassurance that he could turn.

ual Record Blank (1942)³.

The conversion to percentages was done to reduce the score's correlation with *R* even though it does not entirely eliminate it.⁴ With regard to the criticism of employing the product-moment correlation for the typically non-normally distributed Rorschach scores, it should be indicated that its effect is to reduce the value of the correlation (Orange 1953). To the extent that the increase in *R* as a result of the R.B.E. technique improves the normality of distribution of Rorschach scores, the reliability correlation of the Usual plus R.B.E. technique would come closer to its true value and its improvement over the Usual administration would be enhanced. However, this effect should be slight.

After the split-half reliability correlations were obtained for the Usual and Usual plus R.B.E. technique for the 31 percentage scores, they were *z'* transformed to normalize them. To compare them a method suggested by John W. Tukey was employed⁵. The differences between the correlations for the two methods for all of the 31

percentage scores were averaged for all 53 subjects. Nine groups were created by dividing the subjects at random into 8 sets of 6 and 1 set of 5. The average difference in split-half reliability correlations was then re-computed for each of 9 groups by leaving out one of these sets each time. Thus 8 of the re-computations were made on groups of size 47 and one made on a group of size 48. Since these were overlapping groups it was necessary to make up "new" numbers by taking 9 times the overall result for all of the patients treated together less 8 times the result for each one of these 9 groups of patients. The 9 resulting numbers were then treated as a sample of 9 "independent measurements" of the difference between the Usual split-half reliability and Usual plus R.B.E. split-half reliability. Student's *t*-test was then made with 8df.

RESULTS

Before the results pertinent to the hypothesis are reported, an interesting as well as relevant question that required preliminary evaluation concerned the 9 subjects who were physically unable to turn the cards. If the number of Usual responses from the 9 subjects was considerably below those obtained from the others and/or if they added a considerable number of R.B.E. responses, it would automatically load the results to indicate that the R.B.E. technique significantly improved *R*. The results for this problem with this sample were published in an article concerning the relationship between physical disability and responsivity in relation to spontaneous rotation of Rorschach cards (Stein 1958). There were no significant differences in Usual or R.B.E. responses between those who could and those who could not turn ($p > .50$).

The results of the test of the first hypothesis are as follows: an average of 19.7 responses was obtained with the Usual administration which was increased to an average of 26.0 re-

³ Special mimeographed tabulation sheets were prepared to facilitate computing the correlations. Several errors occurred at this time. The CF and C; H and Hd; and A and Ad categories were combined. For some unknown reason these errors were not picked up at the time of transcription of scores to these sheets. The Content categories, Mask and Abstract, were inadvertently left off the sheet although space was left for scoring Content categories other than the ones listed. Since there were relatively few individuals who gave these categories as well as others such as Food, Smoke, Stain, etc., no attempt was made to compute the correlations for these infrequently given content categories.

⁴ We have determined the values of the "residual *r* with *R*" and attempted to evaluate its influence upon the second hypothesis in the section entitled "Additional Procedures."

⁵ Personal communication 1958. I would like to express my special appreciation to Professor Tukey for suggesting this relatively simple method after several unsuccessful attempts at finding a way of comparing these arrays of correlations.

sponses for the Usual plus R.B.E. technique. The difference is significant at better than the .01 level of confidence ($t=6.7$) and we may conclude that the use of the R.B.E. technique materially increases responsivity.

The results on the test of the second hypothesis show an improvement in average split-half reliability correlations from .246 to .288. This was also significant with $t=1.952$ and $p/2=.045$. Pending an evaluation of some of the complications attendant upon

treatment of Rorschach scores, we may at least temporarily conclude that the R.B.E. technique significantly improves the reliability of the Rorschach test.

It would be relatively uninformative to present tables of differences in reliability correlations for the 9 artificial groups or the new numbers obtained by the procedure and formula described above. Instead Table I presents the split-half reliabilities obtained from all 53 subjects for the Usual administration and Usual plus

TABLE I—Odd-Even Split Half Reliabilities Both Obtained and Estimated from Spearman-Brown Formula

Score	Usual Split-Half Reliability	Estimated by S-B with $n=1.295$	Usual plus R.B.E. Split-Half Reliability	Estimated by S-B with $n=2.0$
R ^a		.844	.861	.925
W ^o %	.797			.727
D ^o %	.459	.523	.571	.408
d ^o %	.286	.341	.256	.748
Dd ^o %	.555	.618	.597	.420
S ^o %	.289	.345	.266	.340
	.023	.030	.205	
M ^o %		.074	.139	.244
FM ^o %	.058	.338	.117	.210
m ^o %	.283	.327	.358	.527
F ^o %	.273	.327	.359	.528
k ^o %	.354	.415	-.086	-.014 ^c
Fc ^o %	-.102	-.076 ^c	.307	.470
cF, c ^o %	.247	.298	.074	.138
FK ^o %	.214	.261	.352	.521
K, KF ^o %	.322	.381	.057	.108
C ^o %	.108	.136	.308	.471
FC ^o %	.286	.341	.349	.517
C, CF ^o %	.318	.377	.325	.491
	.230	.279		.160
H ^o %		-.008 ^c	.087	.681
A ^o %	-.012	.536	.516	.183
Aobj ^o %	.472	.074	.101	.446
Anat ^o %	.058	.095	.287	.653
Obj ^o %	.075	.119	.485	.624
Nat ^o %	.094	.609	.454	.423
Plant ^o %	.546	.193	.268	.526
Geo ^o %	.156	.549	.357	.633
Art ^o %	.1 ^c	.509	.463	.720
Arch ^o %	.445	.497	.562	.414
Cloud ^o %	.433	.598	.261	.000
Blood ^o %	.535	.000	.000	.419
Fire ^o %	.000	-.087 ^c	.265	-.009 ^c
Emb ^o %	-.116	-.042 ^c	-.069	
	-.058		.288	.435
Average ^b	.246	.294		

^a R was not used in determining the averages nor was it used in any comparison between Usual and Usual plus R.B.E. responses.

^b The averages were determined through z' transformations.

^c The increase in the negative direction was subtracted from the split-half reliability to bring it in a positive direction.

R.B.E. technique (columns 1 and 3). The full reliabilities (test-retest reliabilities) as estimated by the Spearman-Brown formula are presented in column 4 and this yields an average r of .435.⁶ One immediate consideration should be kept in mind in apprehending the .435 average reliability for Rorschach percentage scores. The sample tested was probably more homogeneous than would be most desirable for a general test of reliability. The patients for the most part, were hospitalized for a number of years in a metropolitan hospital with a resulting restricted environment and were also homogeneous with regard to a limited set of diagnoses.

ADDITIONAL PROCEDURES

Several conditions need to be considered with regard to the improvement in split-half reliability obtained with the R.B.E. technique. Coan (1956) has questioned the validity of employing Location, Determinant and Content scores, arguing that they are not independent measures. To evaluate this possibility, the t -test was used separately for the difference in split-half reliability between the Usual and Usual plus R.B.E. technique for Location, Determinant and Content percentage scores⁷. The improvement in split-half reliability for Location was significant at better than the .01 level ($p/2 < .01$). There was no significant improvement in the Determinant scores but, for the Content scores, there was again a significant improvement in reliability ($p/2 = .025$).

The procedure of converting Rorschach scores into percentages reduces but does not eliminate the score's cor-

relation with R . This residual correlation with R has been pointed out in several papers (Cronbach 1941, Eichler 1951). It is possible that with the increased number of responses obtained through the R.B.E. technique, the residual correlation may have increased and the observed improvement in split-half reliabilities may be completely or partially accounted for by this factor. To evaluate this possibility, the residual correlations with R were calculated for all percentage scores for the Usual and Usual plus R.B.E. technique. These are presented in Table II for their general inter-

TABLE II — 'Residual' Correlations Between R and Score Percent

Score Percent	Usual Administration	R.B.E. Administration
$W\%$	-.572 ^a	-.548
$D\%$	.516	.389
$d\%$	.231	.392
$Dd\%$	.191	.308
$S\%$	.018	.084
Location average	.329	.353
$M\%$	.196	.129
$FM\%$	-.170	-.123
$m\%$	.226	.080
$F\%$	-.324	-.303
$k\%$	-.026	-.063
$Fk\%$	.269	.361
$cF, c\%$	-.013	.037
$FK\%$	.113	.133
$K, Kf\%$	-.111	-.165
$C\%$	.200	.339
$FC\%$	.430	.483
$C, CF\%$	-.028	-.148
Determinant avg.	.179	.202
$H\%$	.310	.370
$A\%$	-.306	-.232
$Aobj\%$	-.073	-.098
$Anat\%$	.115	-.057
$Obj\%$	.111	.080
$Nat\%$	.026	.106
$Plant\%$	-.054	-.109
$Geo\%$	.458	.292
$Art\%$	.077	.079
$Arch\%$	-.014	-.023
$Cloud\%$	-.031	-.059
$Blood\%$	-.036	-.014
$Fire\%$	-.005	.181
$Emb\%$	.059	.043
Content average	.124	.124
Grand average ^a	.179	.193

^a The negative correlations are indicated for information but these signs were disregarded in the computation of the averages through the z' transformation.

⁶ The use of the Spearman-Brown formula for estimating reliability for ratio scores with variable denominators ($W\%$, $D\%$, etc.) has been questioned by Cronbach (1949). This problem is discussed further on.

⁷ The same computations already calculated with the formation of 9 groups was again employed but the determination of the new numbers was recalculated separately for Location, Determinant and Content percentage scores.

est to those using the Rorschach. It can be seen from the table that there is an increase from .179 to .193 (grand average) in the residual correlation with R. This would suggest that at least part of the improvement in split-half reliability should be assigned to the residual correlation with R.

Another way of determining the strength of this factor is to correlate the 'score percent r with R' with the split-half reliabilities for the Usual and Usual plus R.B.E. technique. (Table II, col. 1 with Table I, col. 1 and Table II, col. 2 with Table I, col. 3—all after z' transformation). If the residual correlation with R is an important factor, one should obtain an increase in the correlation. The results were a correlation of .348 for the Usual administration with an increase to .361 for the Usual plus R.B.E. technique. This would be too small to account for the increase obtained in split-half reliabilities; nonetheless, it does again indicate that the residual correlation is a factor operating to improve the split-half reliabilities.

However, if we look at the averages for Location, Determinant and Content, we can see that the average residual correlation with R increased for Location and Determinant percentage scores but remained the same for the Content percentage scores (Table II). Recalling that the t -test of difference showed a significant improvement for the separately evaluated Location and Content reliabilities but not the Determinant reliabilities, it would be necessary to conclude that the increased residual correlation with R is not a factor contributing to the improved split-half reliabilities obtained by the R.B.E. technique.

Still one other factor may reduce the observed improvement in split-half reliability and that is the intercorrelations between scores. To the extent that scores intercorrelate, we are loading the differences just as one might raise test scores by adding many very easy items. Although it has been

established that there is a significant improvement in the reliability of Content scores alone, by virtue of the neglected treatment of Content scores in Rorschach literature we have no idea of the generality of intercorrelations among the Content scores. In any event we know of no method of removing the effects of these intercorrelations so as to obtain pure measures for a test of improvement in reliability.

As mentioned previously Cronbach (1949) has pointed out the error in employing the Spearman-Brown prophecy formula with ratio scores. Nonetheless, the Spearman-Brown formula was utilized in an attempt to evaluate the magnitude of the error. This could be done since in knowing the increase in R with the R.B.E. technique one could compare the estimated increase in reliability by the Spearman-Brown formula against the actual reliabilities obtained. A comparison of columns 2 and 3, Table I, shows considerable variation between estimated and obtained reliabilities for the individual scores. Thus M% was estimated to improve to .074 with an increase of .295 R but improves to .139 with the R.B.E. technique. On the other hand FM% instead of improving to .338 declines to .117. Despite these wide individual fluctuations, the average of all 31 scores (determined through the z' transformation) shows a very close agreement between the Spearman-Brown estimate of .294 and the actually obtained average of .288. It is the author's impression that although the Spearman-Brown formula is most unreliable for estimating reliabilities of individual scores, the errors cancel out when a large number of scores are averaged. It would seem reasonable to conclude that the estimated average reliability of the test-retest ($n=2$) would be reasonably close to .435 (column 4, Table I).

Vernon's observation about improved reliability with increased frequency of responses led to the idea

that if one could elicit a greater variety of scores from subjects the reliability of scores would be increased. Although this line of reasoning is unsound, it, however, led to the question of the relationship between the number of individuals giving a particular score and the split-half reliability of that score. Are the reliabilities of scores frequently given any higher than the reliability of scores infrequently given? For the Usual administration the correlation between split-half reliabilities (z' transformed) and the number of individuals giving these scores was .092 and for the Usual plus R.B.E. technique the correlation increased to .266. The author has no way of understanding the difference between these values other than a large chance fluctuation and that the true value lies somewhere between these numbers. To understand these values it is necessary to realize that a high positive correlation between reliability and frequency would suggest that only the compelling quality of the blots is consistent for the odd-even split whereas the unique contribution to the blots (low external compulsion but high internal pressure) is inconsistent for the split⁸. A high negative correlation would indicate the opposite relationship. The optimum relationship, therefore, is a zero correlation between reliability and frequency. The actual values obtained indicate that the compelling qualities tend to be more consistent throughout the test than the unique responses but this is of a relatively low order and is not too far removed from the optimum relationship.

Two further correlations were calculated to evaluate the clinical usefulness of the R.B.E. technique. Should the number of responses add-

ed by the R.B.E. technique be very highly correlated with the number of responses originally given one might say that its usefulness was limited or one might even be annoyed with a procedure that elicits additional responses from the compulsive's exhausting productivity but adds few responses to the large class of underproductive individuals. The correlation between R in Usual administration to the additional R obtained through the R.B.E. technique was .625. This value suggests a considerable amount of relationship yet is not so high as to preclude obtaining responses from underproductive individuals. The other correlation sought was between the split-half reliabilities from the Usual administration and the split-half reliabilities from the Usual plus R.B.E. technique. Again a very high positive correlation would indicate that the improvement in reliability is obtained from those scores already high in reliability and that the R.B.E. technique adds little to the scores with low reliability values. A negative correlation, on the other hand, would indicate that the R.B.E. technique significantly alters the Rorschach test. The obtained correlation between split-half reliabilities was .749 indicating a moderately high relationship but one in which some changes in reliability are occurring as a result of the R.B.E. technique including improvements in reliabilities of scores initially of low reliability (Compare columns 3 and 1, Table I, especially for Content scores).

DISCUSSION

The R.B.E. technique increases responses by a meaningful percentage. This 30 per cent increase in responses is correlated only to a moderate degree (.625) with the number of responses initially given. Perhaps the most relevant illustration concerns the six records with the lowest number of Usual responses. One subject gave 7 responses, one gave 8, and four gave 9 responses. The 7 and 8 response

⁸"Compelling" and "unique" are not the happiest terms to describe the polar points of a process by which individuals either come to respond to stimuli in some measurement of agreement with others or respond differently.

records added 3 responses each, one of the 9 response records added 5, another added 3 and the remaining two 9 response records gave no R.B.E. responses. These quantitative data indicate to only a small degree the value of the R.B.E. technique. The quality or character of these additional responses has often served to deepen one's understanding of the subject and in some cases it provided critical information through which one was first enabled to understand the entire record. These qualitative observations on the clinical use of the R.B.E. technique was gained with subjects other than the ones employed in this study.

The skewed distribution of Rorschach scores and the intercorrelation between scores would act to reduce the improvement in split-half reliability but these cannot be precisely determined with the methods employed in this study. Were these factors controlled, it would seem unlikely that the improvement in reliability would be completely cancelled out. No matter how small the improvement in reliability might turn out to be, it takes on importance in establishing the validity of the Rorschach. The relationship of validity to reliability is more in the nature of an exponential equation than a linear relationship and one might reasonably expect an increase in the number of studies yielding valid findings than is currently the case.

The score per cent residual correlation with R increases with the Usual plus R.B.E. technique; however, it was shown that there was a significant improvement in reliability of Content scores alone even though these score per cents do not show any increase in "residual r with R." The Content scores also seem to show up better in the relationship between number of individuals giving a particular score and the reliability of the score. Even though relatively few individuals give certain of the Content scores, the reliabilities of these scores are relatively

high. This is seen in Nature, Geography, Art and Architecture. These data would suggest that Content analysis of the Rorschach has more to recommend it than is indicated in most of the Rorschach literature.

A rather fundamental question that remains to be evaluated is whether the Rorschach test is significantly altered by the R.B.E. technique. This is only tangentially answered in any demonstration of improved reliabilities obtained through the use of the R.B.E. technique. The correlation of .749 between Usual split-half reliability and Usual plus R.B.E. reliability is somewhat equivocal. It indicates that some of the reliability values change in magnitude and position with the R.B.E. technique. There is no doubt that the R.B.E. technique modifies the test; the question, though, is whether the modification can be justified or supported in terms of generally improved results. It seems to the author that when test instructions make no mention about turning the cards, any difference in subject handling of this factor tells us something meaningful about the subject. After we have obtained this limited unit of information, it is uneconomical to be satisfied with the limited response pattern resulting from a narrow interpretation of instructions. Should a patient come to a therapist and be unusually inhibited so that in the initial sessions the history is only briefly described, would the therapist be correct in terminating this phase of inquiry? Although the therapist may be able to assess with a fair measure of accuracy the degree of inhibition in the therapeutic relationship and by inference the restrictions in handling outside situations, he would still be unable to evaluate the problem. Inhibition needs to be assessed but it prevents the disclosure of the underlying problem. Furthermore, when one can counteract the inhibition with a stimulus which is effective in a number of cases, one obtains information of considerable value about the sub-

ject's differential response to this stimulus. Of two subjects who neither ask about nor turn the cards, the one who proceeds to give R.B.E. responses is clinically quite different from the one who does not. It nevertheless should be kept in mind that the data obtained with the R.B.E. technique shows a measure of agreement with the original responses greater than the difference from the original responses.

With regard to an improvement in ability to evaluate the test material with the use of the R.B.E. technique, the author's clinical experience with it indicates considerable benefit. These clinical impressions are described in the hope of verification by others. The first benefit is an enriched record, which when internally consistent provides a more solid foundation for personality evaluation and diagnosis. The failure to add responses through the R.B.E. technique, for subjects who do not turn all the cards, generally appears in the antagonistic individuals. In some cases this refusal to be coaxed into additional responsiveness shows up in such statements as "the same thing upside down." This type of reaction was seen in several hostile, suspicious and guarded paranoid patients. It is the author's impression that the R.B.E. technique has the following meaning to the patient, "I am going to enlarge your environment. Can you respond to it?" or "Let us look at the problem from another point of view. Can you get any different ideas?" One 16-year-old girl gave a very sparse record and to the R.B.E. technique gave only one response on card I, "A mule with his head turned away sideways." A number of other cases further supported the impression that a failure to give R.B.E. responses was often followed by a failure to benefit from therapy. Of course further work would be needed to establish such a relationship.

In a number of cases where the subject responded with a sizable increase in R.B.E. responses, it seemed

that their initial timidity and guardedness was overcome by the supportive elements in the technique. This would suggest a positive prognostic implication. In certain cases the subject would respond to color and/or shading in these R.B.E. responses where these were not given in the Usual administration. Although Testing the Limits might have disclosed this potential, there may be an advantage in determining this through a less directive procedure. Some individuals who gave a number of F- responses in the Usual administration came up with improved form quality in their R.B.E. responses suggesting that they have a better potential for reality testing with support than is indicated by the responses obtained in the Usual administration. In a number of cases, the exact reverse was true. Adequate form level was maintained in the Usual administration but on the R.B.E. responses a number of F- responses appeared. Further exploration would be necessary to determine whether these are individuals whose precarious hold on reality is loosened in an analytic or probing type of therapy.

The addition of the R.B.E. technique lengthens the test but this increase in time is less than the proportional increase in responses. Although the additional time requirement is an undesirable feature, the increased reliability justifies its use, particularly in any research on problems of validity. Its greatest clinical value is with individuals giving "impoverished" or limited response records. To gain an appreciation of the range of response patterns elicited by the R.B.E. technique, it would be advisable to use it routinely until sufficient familiarity is gained. After this and under the pressures too often connected with clinical work, the use of the R.B.E. technique may be dispensed with for those individuals giving rich response records. On only rare occasions does the R.B.E. technique elicit a clear and open indica-

tion of antagonism and resentment at the additional requirement. In the large majority of cases, the method of introducing the R.B.E. technique gains the cooperation or at least the tolerant acceptance of the subject.

The odd-even split of the Rorschach cards has been most frequently employed but it is only one of 126 possible splits of the cards. It would be possible to determine which split gives the highest split-half reliability for each score and to check the consistency of findings with additional samples. Although this might show higher average reliabilities than were found in this study, the results would be somewhat academic unless Rorschach studies result in more frequent valid findings. The improvement in reliability found in this study will need to meet the test in the area of validity. Since this study was done on a rather small, homogeneous sample, other studies would be needed to establish the generality of results on other and varied populations.

SUMMARY

A technique for increasing the number of responses was tested on a sample of 53 patients with physically disabling illnesses. A significant increase in responses was obtained as well as a significant improvement in odd-even split-half reliability. Two factors tending to reduce this improvement in reliability are indicated and discussed. Various data indicate that reliabilities of Content scores are relatively high and are also relatively independent of the number of individuals giving these responses. These suggest that greater importance may be ascribed to Content scores than had previously been the case. The influence of the "residual r with R " on the improved reliabilities of the score percentages was evaluated and found to be unrelated to the improvement. An evaluation was also made on the error in employing the Spearman-Brown formula for ratio scores. Moderately high relationships were

shown to exist between numbers of responses initially given and those added by the R.B.E. technique as well as between the Usual split-half reliability and Usual plus R.B.E. reliability. Clinical impressions in the use of the R.B.E. technique were discussed.

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Psychologists' Predictions and Twins' Evaluations of Self and the Paired Sibling

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Several recent studies have concerned the influence of adherence to norms or social stereotypes on the accuracy of prediction (or postdiction) of behavior. Caldwell (1958) found that the agreement of his judges with normative data was by far the most powerful determinant of their success in predicting questionnaire responses of an alcoholic, a psychiatric patient, a criminal, and a normal subject. Gage (1952) discovered that his judges' predictions of self-descriptions were more accurate when the predictions conformed to the judges' social stereotypes. Corah, Feldman, Cohen, Greuen, Meadow, and Ringwall (1958) showed that students agreed that many of the pairs of items in the Edwards Personal Preference Schedule contained one item more socially desirable than the other (despite Edwards' careful pairing), and that such rated social desirability correlated .88 with proportions of response choices made by another sample of students.

This is a report of the failure of two psychologists to predict the self-descriptions of members of twin pairs from projective test data, except to the extent that the descriptions conformed to the modal responses made by the twins, even though they successfully matched the twins on the basis of the same data.

PROCEDURE

Five same-sex pairs of twins (four female, one male), all college students, were asked to describe themselves and their twins on the same 30 yes-no items. A battery of projective tests was administered, including the Rorschach, TAT, Rosenzweig P. F., Draw-a-Person, Word Association, and

a Sentence Completion test. Ss were also asked to describe an average day in their lives five years in the future.

Using the projective test data, two clinical psychologists trained and experienced in the use of projective techniques but neither involved in the administration of the tests nor acquainted with any of the Ss gave their evaluations of the Ss on the 30 items on the basis of the Ss' projective test responses. They also predicted how the Ss would answer the items and how they would describe their twins. In addition, the psychologists attempted to match the twins.

The amount of agreement between the various descriptions and predictions was measured in terms of the number of identical responses to the 30 items. For control purposes the same 10 Ss were randomly re-paired so that each S was coupled with a non-twin. Amounts of agreement were then obtained in the above manner as if the new pairs were twins, and the resulting figures were compared with the appropriate figures for actual twins to control for stereotypy and chance variations. For example, the number of agreements between A's description of her twin, B, and B's self description was compared with the number of agreements between A's description of B and the self description of C, a non-twin with respect to A.

Since the results appeared to be attenuated by the presence of a number of non-discriminating items, those items which were answered in the same way in over 75 per cent of the descriptions were eliminated. Twelve of the thirty items were retained as sufficiently discriminating. These 12 items are listed in Table I.

TABLE I—Questions Used in Predictions and Descriptions

Question Number	Question
2	Do you day-dream frequently?
11	Do you study the motives of other people?
13	Do you get stage fright?
17	Do you usually try to avoid loneliness?
19	Would you complain to a waiter if you were served inferior or poorly prepared food?
20	Do you usually enjoy spending an evening alone?
21	Do you make new friends easily?
24	Are people sometimes successful in taking advantage of you?
26	Do you have difficulty in making up your mind for yourself?
28	Do you usually prefer to keep your feelings to yourself?
29	Do you feel anxious or unsure about the future?
30	Are you sometimes troubled over what is right and what is wrong regarding behavior concerning sex?

RESULTS

On the basis of the projective test protocols alone, two psychologists independently matched the five twin pairs perfectly. Even eliminating the male pair because of clues to their sex in their one-day future biographies (both mentioned "my wife"), this result is significant beyond the .01 level (using an exact probability test).

Therefore, the projective tests revealed discernible similarities between twins and discriminable differences among twin pairs. However, the psychologists' descriptions of the Ss were related to nothing and the psychologists' predictions of what the Ss would say about themselves were no better than chance as defined by matching the predictions with self-descriptions of non-twins of the Ss (68 versus 71 agreements of a possible 120). The descriptions of the same Ss done by their twins corresponded with what the Ss said about themselves in 72 of a possible 120 agreements as compared with 52 agreements with the self descriptions of non-twins. The resulting chi-square is significant ($p < .05$) but is only one of sixteen initial comparisons, only two of which were significant; so this result may be misleading. In any case it is interesting that the twins' descriptions agreed no more with Ss self descriptions than did the psychologists' predictions (72 versus 71 agreements). The data are presented in Table II.

It was hypothesized that the psychologists' predictions being no better than "chance" but just as accurate as the Ss' descriptions of their twins might be due to the operation of stereotypes for psychologists. The accuracy of psychologists' predictions

TABLE II—Numbers of Agreements Among Subjects Descriptions of Self and Twin and Predictions and Descriptions Based on Projective Test Information

Agreements between	Self Descriptions	Descriptions by Twins	Predictions of Psychologists'		Psychologists' Descriptions
			Self Descriptions		
Self Descriptions	35 ^b (26) ^a	72 ^a (52)	71 (68)		62 (60)
Descriptions by Twins		36 ^b (30)	72 (67)		58 (56)
Psychologists' Predictions			32 ^b (43)		68 (54)
Psychologists' Descriptions					38 ^b (38)

^a. Control figures in parentheses.

^b. There are 60 possible agreements in these cases, 120 in all others. The comparisons on the diagonal were done for pairs of twins rather than individuals. For example, each of the ten Ss' self descriptions can be compared with the twin's description of that S, but there are only five possible comparisons of twins' self descriptions.

* Significant at the 5% level.

was tested against a control figure which consisted of the number of agreements between psychologists' predictions of Ss self descriptions and the self descriptions of Ss for whom the predictions were not intended. This control figure was significantly greater than the number of agreements between Ss' descriptions of their twins and self-descriptions of non-twins (68 versus 52 agreements, $p < .05$; this was not an *ad hoc* selection from a number of comparisons but was done to test the above hypothesis). What appears to have happened is that psychologists predicted in accordance with social norms of which they had more awareness than the Ss (or at least used more extensively) and did as well as the Ss did in describing their siblings on the basis of intimate acquaintance. In making their predictions, both psychologists consciously considered what they thought would be deemed socially desirable by the Ss. That there were stereotypes operating in the psychologists' prediction behavior is further indicated by the fact that randomly paired psychologists' predictions were significantly more alike ($p < .02$) than randomly paired descriptions of the Ss made by their twins.

Although there were more individual differences in the descriptions made by the twins than in the predictions of the psychologists, there is evidence that their descriptions were influenced by a different kind of stereotype. They erred in the direction of thinking their respective twins more like themselves than is actually the case. Their descriptions of their twins were significantly more like their own self-descriptions than they were predictive of the twins' self-descriptions (97 versus 72 agreements of a possible 120, $p < .001$). In other words, the Ss projected their own conscious self concepts in describing their twins.

It is interesting that the projective test data apparently did not contribute to the psychologists' predictive success although they were sufficiently

rich in meaningful cues to allow them to match the twin pairs perfectly. One usually anticipates that a more "refined" and detailed predictive study will yield more information than a matching study, but this was not true in this case. Perhaps the selection of items was at fault. This is supported by the *a priori* unlikely result that twins were no more alike in their self-descriptions with those items than were non-twin control pairs.

These results are consistent with Palmer's (1951) findings in an earlier study of the matching versus the item check list methods of validation of projective techniques. Although therapists successfully selected Rorschach reports to match their patients, they failed to agree with Rorschach interpreters in describing the same patients on a check list. However, the interjudge reliability on the check list was above chance for both the Rorschach interpreters and therapists. Palmer suggested that the two sets of judges were using consistently different "conceptual frameworks". Perhaps "stereotypes" would have been the more appropriate term.

SUMMARY

Self descriptions and twin descriptions of 5 pairs of same sex twins were compared with each other and with predictions and descriptions done by two psychologists based on a battery of projective techniques given to the twins by another person. It was found that while the clinical psychologists matched the test protocols of the twins perfectly, they were unable to predict the twins' self descriptions differentially. However, their predictions were as accurate as the twins descriptions of each other. It appeared that psychologists' successes were largely due to the applicability of their stereotypes regarding common or average behavior. Twins displayed personal stereotypes in the form of viewing their siblings in terms of their own self images.

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The Revised Bender-Gestalt And Male Alcoholics¹

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INTRODUCTION

Emphasis on the nature of fundamental perceptual processes has constituted the focus of many recent developments in clinical research and practice employing projective instruments (Hutt, 1953; Piotrowski, 1957; Schachtel, 1941, 1950). The Bender-Gestalt test has been a relatively prominent device in diagnostic testing procedures, being used especially by those confronted with patients suffering various cortical impairments. Yet it would be too much to say that its potentialities as a projective technique have even begun to be systematically explored. Psychological research in the area of alcohol addictions, in particular, has been very deficient with respect to the most rudimentary projective aspects of the Bender-Gestalt test. To be sure, the literature does contain reports of three investigations in which the Bender-Gestalt was used, either singly (Curnutt, 1953) or as one of two or more tests in a battery (Kaldegg, 1956; Kates, 1953), but the findings obtained, if not actually contradictory, are often conflicting and in many ways difficult to compare and explain. The present paper begins with a brief review of previous studies, proceeds by reporting an attempt to replicate one of these investigations (Curnutt, 1953), and in addition presents results derived from testing a number of hypotheses relevant to the Bender-Gestalt as a specifically projective technique.

Kates and Schmolke (1953) pub-

lished the first study concerned with the Bender-Gestalt records of alcoholics in which scores were calculated for 18 male alcoholics and 18 non-alcoholic custodial workers in a psychiatric hospital who served as a control group. The investigators found no statistically significant differences between the performances of alcoholic and controls when compared for total raw scores, as determined by the Pascal and Suttell (1951) method of scoring the Bender-Gestalt, scores for individual designs, and configuration scores. In fact, the control subjects earned a slightly higher (poorer) mean raw score than did the alcoholics in the sample. Kates and Schmolke (1953, p.44), further reported "no qualitative difference between the Bender-Gestalt performance of the two groups."

Without minimizing the importance of this study, three criticisms of it may be made. First, the sizes of both testing samples are smaller than statistically desirable. Second, we suspect that a control group composed of hospital custodians is far from ideal, in fact markedly atypical. The research evidence of Stanton and Schwartz (1954) supports the notion that hospital attendants might constitute an unrepresentative control sample. Third, by concluding merely that the reproductions of alcoholics and controls failed to differ qualitatively the authors make impossible an exact replication of their study. It is important not only to report what difference or differences were being sought, but also what led the authors to expect such differences, and how their presence or absence might be explained and integrated.

A second study has been reported by Curnutt (1953) who tested the usefulness of scoring the Bender-Ges-

¹ From: Alcoholism Research Foundation, 9 Bedford Road, Toronto, Canada.

² The author wishes to acknowledge with gratitude the helpful suggestions and encouragement offered by John R. Seeley and Robert J. Gibbins, Alcoholism Research Foundation, and Professor Max L. Hutt, University of Michigan.

talt according to the Pascal and Suttell method as a tool for discriminating between alcoholics and non-alcoholics. Like Kates and Schmolke, he carried out his research in Oklahoma at a time when that state maintained Prohibition laws.³ Curnutt's findings, that the mean score of the control group was 52.68 while the mean alcoholic score was 72.68, allowed him to conclude that a mean score difference of this magnitude was significant at the .01 level and that the test could discriminate between the two samples.

Curnutt further attempted to isolate "a syndrome or unique configuration of signs unique to alcoholics" (p. 288), although no plausible reason is given for suspecting any individual sign nor all of the signs in their severality to be unique to alcoholics other than that only four members of the control group exhibited them. Thus, by definition, none of the signs was "unique" to alcoholics. We are inclined to feel that there is no *a priori* or persuasive theoretical reasoning in favor of the view that these signs should be unique to alcoholics, especially if such an isolation procedure implies assembling a body of signs diagnostic of an "alcoholic personality."

Third, Kaldegg (1956) has reported results from a group of 16 male and 2 female alcoholics tested on the Bender-Gestalt and various other tests. His study suffers markedly from the lack of a control group against which to assess the records of alcoholics, from the relatively small sample, and from the fact that the reproductions are not scored according to any of the available systems. Kaldegg was of the opinion that a psychoneurotic rather than organic picture emerged from his data.

The author's own conception of the alcoholic is that of an individual manifesting a wide range of neurotic symptoms among which addiction to

alcohol is particularly obtrusive. Thus, alcoholics may be expected to display, not a consistent or unique set of disturbances, but rather an array of complex disorders *some of which appear to a greater or lesser degree in all alcoholics while others either overlap a number of different psychiatric groupings or are specific to only a small percentage of those addicted to alcohol*. In the present study we shall select a few of the chief aspects of psychodynamic functioning widely considered typical of male alcoholics and make specific hypotheses regarding the corresponding reproductions to be expected on the Bender-Gestalt on the basis of these prominent psychodynamic traits. We shall also attempt to validate Curnutt's findings, but unlike Curnutt whose approach was strictly empirical, we shall try to suggest *why* these alcoholic signs, if they reappear at all, should be so strikingly evident in the alcoholic's record.

TESTING PROCEDURE

In order to follow our hypotheses, it is first necessary to grasp the method of test administration employed, for it differs considerably from the procedure used in the studies reviewed above. In general we follow the method of administration proposed by Hutt (1953) and use the Revised Bender-Gestalt designs which he has devised. The main procedural innovation involved consists of giving a different set of instructions, whereby, after the standard procedure, the testee is asked to elaborate or modify the original drawing in any way that renders it more aesthetically pleasing to him, and then to state his association to what the elaboration suggests or represents.

HYPOTHESES AND EXPERIMENTAL METHOD

Our initial hypothesis is that since integration of ego functioning on the part of alcoholics is widely felt to be at a lower, less efficient level than that of a non-psychiatric control

³ At the very least, the route to alcoholism in this situation would be contra-legal behavior or "delinquency."

group, this differential functioning level will be reflected in a significant difference in mean scores for these two groups, alcoholics earning the higher scores.⁴ Here we shall examine Curnutt's proposal that alcoholics should earn a Z score of at least 59 but not greater than 91. A less molar hypothesis concerns the frequent observation that alcoholics are exceedingly anxious people. One way in which this anxiety may manifest itself, we suggest, is in the compulsive and meticulous counting of the number of dots in a design, either aloud and moving the lips, or with the pencil (or finger). This overly controlled, perfectionistic behavior is best observed on design five; our hypothesis is that alcoholics will count the dots at least once on this design, and in the manner specified, significantly more often than control subjects. Curnutt's investigation suggested a second hypothesis concerning design five to the effect that alcoholics should receive a score of 2 or more on this design. For the reason stated above, we disbelieve this claim and hypothesize that alcoholics and controls will not differ significantly on the dichotomized variable of score less than 2 and score of 2 or more on design five.

A low tolerance for frustration and corresponding avoidance of stress are among the most frequently observed behavior patterns in alcoholics. Characteristically, this behavior is to be seen in withdrawal or escape from the demands of interpersonal activities rooted in deepseated and pervasive anxiety about interpersonal relations in general. Briefly, rather than endure the frustrations of unsatisfactory cathexes, the alcoholic chooses to flee from them. We hypothesize that this psychological blocking in the

face of interpersonal demands should be evident in the response behavior to certain designs having intersecting, overlapping, or joined lines, e.g. designs A, four, six, and seven. On the revised design six, for example, where the stimulus may be perceived as either two intersecting sinusoidal lines or two separate, nonintersecting, yet still touching sinusoidal lines, we hypothesize that alcoholics will perceive and reproduce these lines in the latter fashion, i.e. as non-intersecting, significantly more often than the control subjects. We further hypothesize in advance that in their elaborations of design seven, which is the most difficult to reproduce with complete accuracy, the alcoholics will wholly separate the two irregular hexagons, or reproduce them as separate but with two ends just touching, a significantly greater number of times than the control group in their elaborations. If this occurs, a number of inter-related hypotheses bear psychodynamically upon such a tendency. The simplest hypothesis would be that in terms of expending energy, this elaboration represents the easiest, least demanding way of modifying this design. Low tolerance for the stresses of "interpersonal overlapping," so to speak, might also help to explain this visual-motor separation if it occurred with more than chance regularity. Much less easy to substantiate experimentally would be the more overtly psychoanalytic derivation that since alcoholism represents a failure in the sublimation of latent homosexual personality trends (Fenichel, 1945) separation of the two phallus-like hexagons is in response to threatening or even panic-inducing homosexual urges which the alcoholic is attempting to repress.

The suppression of affect, especially when the affect pressing for release is heavily weighted with opposition and hostility, is another frequently mentioned crucial defense in the psychodynamics of many alcoholics. Stated somewhat differently, emotionally a-

⁴ Some of the hypotheses investigated have been directly suggested in a provocative article by Hutt 1953; the reader is referred to this chapter for additional sources on the Revised Bender-Gestalt test and for an illustration of the designs.

rousing stimuli must be controlled and made non-emotional, coherent, and ordered by the alcoholic; whatever is chaotic and poorly secured must be anchored and stabilized. Several designs elicit marked feelings of emotion when placed before the testee, with designs two and six probably being the most emotion-inducing of any. Thus, we hypothesize that alcoholics in elaborating design two will try to relieve the emotion created by the slanted and free-floating columns of circles by a change in slant to the vertical, by the use of solid straight lines, or by reversing the direction in slant of the circles. This last elaboration would represent a less adequate suppression of affect since it further may well reflect overt hostility and rejection of the test. Hutt (1953) has suggested that opposition and antagonism should also be manifest in mild rotations of certain designs in a counter-clockwise direction. Since design seven presents the most striking vertical placement of figures, we should most expect counter-clockwise rotation to occur on this design. Thus, in view of Curnutt's rotation sign, our specific hypothesis is that alcoholics, significantly more than controls, will rotate the upright hexagon on design seven more than 5 but less than 20 degrees to the left.

The experimental subjects tested in this study consisted of a group of 30 white male alcoholics drawn consecutively from two Toronto in-patient clinics for treatment of alcoholism, 24 coming from Brookside clinic, six from the Bell Clinic. None of these subjects had received any medication, with the occasional exception of Antabuse, for at least 24 hours prior to the time of testing and none had received any form of electro-shock therapy. There is no reason to believe that Antabuse treatment influenced test performance. The socio-economic level of all the patients was in the middle-class range, none being drawn from a skid-row type alcoholic population. Within this range, lower-middle

to middle-middle class patients predominated but a few upper-class alcoholics were also included. Some had undergone previous treatment for their drinking problem and all of the patients, even the youngest, had suffered problems related to drinking for at least 5 years. The age range was 23 - 60, the mean age being 43.

The control group was composed of 30 white male, non-psychiatric, elementary and secondary school teachers. Their age range was 24-56 with a mean age of 40 and their socio-economic status was very similar to that of the alcoholic group. All of the control subjects denied drinking problems but all stated that they would drink socially. They were enrolled in a summer course for teachers offered by the University of Toronto and responded as volunteers to an appeal by the investigator for a control sample. Participation was not mandatory, academic credits were not involved, and those that signed up appeared to do so in order to co-operate and to see at first hand a research setting for alcoholics.

The records of all subjects were kept anonymous by having all distinguishing marks erased and then coded independently from a table of random numbers. The author then scored all the records according to the system of Pascal and Suttell, having first scored all the examples at the end of this manual with results in close agreement with those agreed upon by the authors. Twenty-four records were then randomly selected, twelve being chosen from each of the two groups, and scored independently by an experimental psychologist whose results thus served as a reliability index for the author's scoring.⁵ The reproductions were later analyzed by the author for the purpose of scoring and tabulating the presence or absence of the hypothesized signs.

A product-moment correlation co-

⁵ Warm appreciation is extended to Muriel D. Vogel, Research Associate, Alcoholism Research Foundation who volunteered to act as the reliability check for the present study.

TABLE I. Mean Score Differences* and t-Value

	Alcoholics N = 30		Controls N = 30	
	Raw Scores	Z Scores	Raw Scores	Z Scores
Range	26 - 81	59 - 117	6 - 29	42 - 68
Mean	50.73	85	16.26	53
s	12.62		6.1	
t	13.52; $p < .0005$ for one-tailed test			

* Controlled for education.

TABLE II. Chi-Square Tables for Projective Hypotheses (H)

H	Alcoholics		Controls		χ^2	P
	H	Non - H	H	Non - H		
Counting dots, #5	22	8	13	17	4.39	< .05
Score of 2 or more, #5	28	2	26	4	.18	.65
Intersection, #6	7	23	18	12	6.85	< .01
Separation of hexagons etc., #7	20	10	8	22	8	< .01
Change in columns, #2	18	12	7	23	6.85	< .01
Rotation of hexagon, #7	11	19	3	27	4.56	< .05
Liquid responses, #6	16	5	2	19	16.43	< .005

efficient was employed to obtain a reliability coefficient between the 24 pairs of scores given by the two scorers and results in a coefficient of $r = .9946$. It is emphasized that these sets of scores were obtained independently and with identifying marks deleted from the reproductions.

RESULTS

Table I presents the data relevant to use of the t-test for mean score differences between alcoholic and control groups. The range in raw scores for alcoholics is 26 - 81 with a mean raw score of 50.73; the alcoholics' Z score range is 59 - 117 and the mean Z score when controlled for education is 85. The range in raw scores for control subjects is 6 - 29, their mean raw score is 16.26; the control group's Z score range, again controlled for education, is 42 - 68 and mean Z score is 53. A t-test can be applied to test the null hypothesis of only chance differences in mean scores between the two groups; with D.F. = 58, this null hypothesis may be rejected at $< .0005$ level

for a one tailed test and we conclude that the mean score differences indicate independence of our two groups.

Table II is a summary of the statistical operations and results concerning the various projective hypotheses made. The outcome of the chi-square analyses are as below and follow the earlier order of presentation of the hypotheses.

1. Alcoholics count the dots on design five, aloud or with a finger or pencil, significantly more often than the controls; $p < .05$.
2. Alcoholics and controls do not differ significantly on the dichotomy of score less than 2 and score of 2 or more on design five; $p .65$.
3. Alcoholics differ significantly from controls in frequency of reproducing design six as separate non-intersecting lines; $p < .01$.
4. Alcoholics, in their elaborations of design seven, significantly more often than control subjects either totally separate the two hexagons or draw them with two tips just touching; $p < .01$.
5. In elaborating design two, alcoholics either change the columns of circles to the vertical plane, use solid straight lines, or reverse the direction in slant of the

circles significantly more often than controls; $p < .01$.

6. Alcoholics rotate the upright hexagon in design seven more than 5 but less than 20 degrees to the left a significantly greater number of times than control subjects; $p < .05$.

As with the results of virtually all projective testing, some unexpected systematic findings emerged from the data upon close inspection. One such discovery in the present study concerned the elaborations and associations to design 6 by the alcoholics. Significantly more often than the control subjects, the alcoholics elaborated the sinusoidal curves to represent water in such forms as waves, ripples, rivers, torrents, lakes, etc. Twenty-one subjects from each group elaborated this design in some way other than merely recopying the original stimulus; a chi-square analysis was formed and yielded $p < .005$.

DISCUSSION AND CONCLUSIONS

The broadest hypothesis under investigation is that the differential level in ego functioning of alcoholics and non-psychiatric control subjects will manifest itself in a significant difference in mean scores for these two groups on a visual-motor test, in this instance the Revised Bender-Gestalt test. The direction of this difference is specified in favor of the alcoholics earning higher (poorer) deviation scores than the controls. Strong support for this hypothesis is offered by the t -value of 13.52 which is significant at $< .0005$ level. This result is significant at an even higher level than Curnutt's finding which was significant at the .001 level. Moreover, the mean Z score obtained for alcoholics is more extreme in an upward direction than that in Curnutt's study; consequently, the range of alcoholics' Z scores was also greater in the present study, 59 - 117 here as against 59 - 91 in the Oklahoma study. The control groups in both studies had almost identical mean Z scores. We conclude, therefore, that the Bender-Gestalt is

able to distinguish quantitatively with a high level of confidence between an alcoholic and non-psychiatric control group.

Six further exploratory hypotheses were submitted to test and all received significant statistical support. In addition, a seventh significant finding was revealed, *viz.* the alcoholics' marked tendency to elaborate and associate liquid responses on design six. We can propose, in *post hoc* fashion, one or two explanations for the emergence of these water-related elaborations. One line of speculation, for example, would suggest that such associations are *prima-facie* evidence of the alcoholic's fixated oral preoccupations, water merely representing alcohol in sublimated form. A second conjecture might be that water and liquids in general represent psychologically the oceanic longing for reunion with a loved and omnipotent mother (Fenichel, 1915, p.405). Yet a third postulation would beg that fluid elaborations of this kind indicate the regressed and ill-defined state of the alcoholic's ego boundaries. All three suggestions dispose us to the opinion that alcoholics are orally dependent people seeking assistance from others, in some cases the mother, in other cases men.

One of our major criticisms of Curnutt's study was that there is little justification for the notion that the six signs which he found with striking regularity in his alcoholic sample are in any sense unique to alcoholics in general. In no instance were any of the so called unique signs found solely in the records of alcoholics, and in no instance was any sign consistently found in the records of all alcoholics. The author believes that the results of testing patients with a wide variety of other psychiatric disorders on the Revised Bender-Gestalt would weaken still further the view that any sign or configuration of signs is unique *vis-à-vis* any group bearing a single broad diagnostic label. We do believe, however, especially with reference to the

work of Kates and Schmolke, that the burden of responsibility rests with the investigator to state what distinguishing qualitative signs are being sought on the Bender-Gestalt before concluding that none are discoverable.

The exceptionally high reliability coefficient of 99.46 obtained from independent scoring of 24 records is striking evidence for the usefulness of the Pascal and Suttell method of scoring deviations on the Revised Bender-Gestalt test, even though this system was devised for Bender's original test. The slight but important differences between Hutt's revised designs and the earlier ones raised no problems in scoring. Perhaps the greatest shortcoming in this scoring system is the absence of deviation norms for design A, an absence which Pascal and Suttell fail adequately to explain. Presumably, it is to be regarded as a practice item introducing the testee to the kind of task lying ahead. Our own feeling is that the reproduction of design A can be highly informative and in a way that permits scoring those deviations indicated on many of the later designs, number four in particular.

A possible criticism of the conclusions drawn from this study is that the results are not so much attributable to the experimental variable alcoholism, as to the variable of whether or not the subjects have a low tolerance for discomfort and have sought admission to a clinic. In other words, some may raise the objection that the types of responses given by the alcoholics are simply those of people who come to clinics or of non-volunteers and non-teachers rather than of alcoholics at large in the population; and that the responses of the control group represent those of volunteers and teachers. Our design does not permit us to meet this criticism with decisive evidence to the contrary. It therefore places a degree of restraint upon the generalizability of our findings, unless, of course, an alcoholic is defined as an individual being treated at a

clinic for alcoholism and is not to be considered an alcoholic until so situated. If it is true that we have been dealing with an extreme group of alcoholics we acknowledge this possibility and limit our conclusions to a random sample of that population of alcoholics who have come to an alcoholism treatment center.

The significance of the findings reported seems to support at least two or three legitimate contentions regarding the Revised Bender-Gestalt test. In the first place, it is able to distinguish alcoholics in an in-patient clinic and non-psychiatric control subjects on the basis of their deviation scores. Secondly, when analyzed in the light of clearly stated qualitative variables it can be a most sensitive, efficient, and instructive device for the eliciting of depth material in personality dynamics. On the other hand, it should not be used atomistically in the sense of looking in one to one fashion for unique signs diagnostic of individuals belonging to well-defined nosological categories.⁶ Further, the Revised Bender-Gestalt is a highly reliable test with respect to inter-scorer reliability; its test-retest reliability is a problem awaiting a more long term investigation.

SUMMARY

A replication study has been reported using the Revised Bender-Gestalt test on 30 male alcoholics and a comparable control group of 30 school teachers. Yet unlike earlier investigations, this study has, in addition, made use of projective theory to hypothesize what kinds of differential test reproductions should be expected on the basis of certain psychodynamic traits repeatedly mentioned as typical of male alcoholics, e.g. compulsivity, overt anxiety, low stress and frustration tolerance, suppression of affect, opposition, and antagonism. It is emphasized that these neurotic personality

⁶ The author is clearly of the opinion, however, that certain kinds of visual-motor responses on this test consistently point to corresponding kinds of psychodynamic functions.

characteristics are not unique to alcoholics, are not found universally in all alcoholics and, correspondingly, that no test signs unique to alcoholics or manifested by all alcoholics should be hypothesized.

A t-test of mean score differences indicated the ability of the Revised Bender-Gestalt to distinguish alcoholics in a treatment clinic from non-psychiatric controls, $p < .0005$. All of the author's projective hypotheses received support from the chi-square operations performed. A systematic, significant finding emerged on design six: alcoholics made predominantly liquid responses in their elaborations and associations to the design. Inter-scorer reliability was shown to be unusually high for the Revised Bender-Gestalt. Finally, its sensitivity to deeper level personality mechanisms was stressed.

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Orality, Image Fusions and Concept-Formation¹

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INTRODUCTION

Several studies (French, 1955; Applezweig, 1954; Forster, Vinacke, & Digman, 1955) and a review of the studies on the Luchins Water-Jug test (Levitt, 1956) have shown there is little or no consistency among different tests proposed as measures of rigid problem-solving behavior. As a result, it has been concluded that rigid behavior is dependent upon three factors: (1) the nature of the test, (2) the conditions of test administration, and (3) behavioral determinants within the subject (Applezweig, 1954).

The present study is concerned with the last of these three factors, the behavioral determinants of rigidity, specifically in the Hanfmann-Kasanin Concept-Formation Test (H-K test). We propose three behavioral determinants as important for solving the H-K test, and we have used scores from the Rorschach as independent measures of these determinants. That is, subjects who had been given the H-K test under uniform conditions were also given the Rorschach. Then the relations between Rorschach scores and measures of H-K test performance were studied. Because of the frequent inconsistent findings among different studies (Levitt, 1956), it was felt necessary to have three independent replications in the present study before reporting our findings.

The Behavioral Determinants and Their Independent Measures

The H-K test consists of 22 blocks of 6 different shapes, 5 different col-

ors, 2 different heights, and 2 different sizes of top-surface areas. The subject is required to group the blocks into four groups according to some rule or principle. The correct solution requires consideration of the height and top-surface area only, i.e., grouping the tall, large-top surface area blocks together, the tall, small top-surface area blocks together, etc.

On the basis of these characteristics and the observations of how Ss ordinarily go about attaining the correct solution, we propose the following behavioral determinants as important for solving the H-K test:

Behavioral Determinant (A). The ability to set aside, at least temporarily, routinized, set ideas concerning the important aspects of the environment.

Independent Measure. We have used Holt's (1957) index, Image Fusions, Level II², as the measure of the ability to set aside temporarily routinized modes of conceptually categorizing the environment. Predominantly this is made up of responses showing contaminations (which have a cultural or artistic justification) and fabulized combinations, e.g., centaur, a crab throwing a sheep. The rationale for using these measures is that in these Rorschach responses also there is a setting aside of reality-standards, i.e., of the usual ways of conceptualizing what things are and how they go together.

Behavioral Determinant (B). A passive, receptive attitude which allows for the influence of new ideas relating to previously unnoticed aspects of the environment.

² For the Rorschach measures of the behavioral determinants we are in debt to R. Holt and his co-workers (Holt, 1954; Holt, et al., 1957).

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Independent Measure. For the measure of the passive, receptive attitude we have taken Holt's measure of libidinal orality. This includes responses which have as their content something pertaining to eating, the mouth, or oral activity, e.g., food responses, drinking, mouth open expectantly.

Behavioral Determinant (C). The relative absence of aggressiveness.

Independent Measure. For the measure of aggressiveness we have used Holt's scales on manifestations of aggression in the content of Rorschach responses. This includes indications of potential aggression (e.g., fierce lion), active aggression (e.g., exploding bombs), threatened objects (e.g., cowering animal), and damaged objects (e.g., conductor without his head).

Finally, because we do not believe these determinants are independent of each other in facilitating problem-solving, we propose that a composite score made up of all these measures will also be related to H-K test performance.

EXPERIMENTAL PROCEDURE

The investigation consisted of three independent replications, each one with different Ss and a different examiner (Sonoda, 1959; Sengstake, 1959).

Subjects

Male and female college students recruited from courses in psychology were utilized. Twenty-seven Ss (16 male, 11 female) were in the first replication, twenty-three Ss (10 male, 13 female) in the second, and thirty Ss (19 male, 11 female) in the third.

In two of the replications the Rorschach was administered first, followed by the H-K test. In the first and third replications both tests were given on the same day. In the second replication there would sometimes be an interval of two to three days between the tests for a given subject. The administration of the H-K test was different from the customary ad-

TABLE I—P Values of Differences in Rorschach Scores Between "Pass" and "Fail" Ss on the H-K Test

	Oral	Aggression	Image Fusions, Level II
1st replication N = 27	P < .05 ^a	P > .05	P > .05
2nd replication N = 22	P < .05	P > .05	P < .05
3rd replication N = 30	P > .05	P > .05	P < .05
For combined three P values	P .01 ^b	P > .05	P < .01

^a The Mann-Whitney U Test (Siegel, 1956) was used to determine the P value for each score in each replication separately. A one-tailed test was used. The direction of the relations for which the P value is below the .05 level is the predicted one.

^b The P value that the obtained combined probability values for each Rorschach score on the three replications could have been obtained by chance, was determined by the Chi-square model suggested by Jones and Fiske (1953).

ministration only in the manner in which the cues were given. In order to make the time to correct solution a more comparable score — at least on an objective basis — one cue (turning over one block) was given every five minutes after the initial cue was given during the instructions.

Results

Table I presents the results on the differences between Ss solving the H-K test in less than 30 minutes (Pass Ss) and Ss taking more than 30 minutes (Fail Ss) on each of the Rorschach measures proposed. This is done for each replication separately, and for all combined.

Inspection of Table I shows that the Rorschach scores of Orality and Image Fusions, Level II both differentiate reliably between the Pass and Fail Ss for the three replications considered together. The Aggression category did not.

A single, combined measure involving all three Rorschach scores was also developed. Distributions on each Rorschach score were split at the median, and Ss were given a plus sign for

TABLE II—Tests of Association Between Number of Favorable Rorschach Signs and H-K Test Performance

Number of Favorable Rorschach Signs					
H-K Test Performance		1st Study		2nd Study	
		0,1	2,3	0,1	2,3
Pass		6	15	2	13
Fail		6	0	6	1
		P<.005*		P<.005	
		3rd Study			
Pass		7	12		
Fail		9	2		
		P<.05			

^a In each case, Fisher's Exact P was used (Siegel, 1956).

scoring above the median on the Oral and Image Fusion indices, and a plus sign for scoring below the median on the Aggression category. Then the number of plus signs for each S was summed. Thus the number of possible plus signs for each S ranged from 0 to 3. In Table II the relations between the number of plus signs and H-K test performance is presented for each study. As can be seen, remarkably strong and consistent results show up under this analysis.

DISCUSSION

We have now to analyze the measures involved in order to see what likely psychological processes may be inferred on the basis of our results.

The shape and color of the H-K blocks are the most obvious and easily verbalized aspects of the blocks, and almost all Ss try first to solve the test on the basis of these characteristics. Past experience no doubt contributes to this. We are taught, and find it most often useful when dealing with small objects, to distinguish and identify them in terms of their shapes and colors. Since the correct rule involves height and top surface area, it is obvious that the longer Ss persist in using the more easily grasped color and shape ideas, the longer it will take to solve the test. A crucial, though perhaps obvious, step, then, for solving the H-K test is

to set aside in one's thinking those concepts which are, unfortunately, both incorrect and supported by past experience.

We may compare this analysis with the processes involved in the Rorschach measures of Image Fusions, Level II. In these responses, the subjects see something that does not exist: the responses have relations with an object or between two objects which do not exist in reality. We may formulate this as the ability to consider consciously possibilities suggested by the present stimulus material, but which possibilities run counter to concepts based on past experiences with reality.

From the consistency between the two measures just discussed we may infer that there is a preconscious selection mechanism which, for some people more than others, keeps out of conscious awareness, on the basis of likelihoods established in the past experience, possible contents suggested by the sensory field.

We turn now to the other Rorschach score consistently related to time to correct solution on the H-K test — the measure of libidinal orality. We have proposed that this reflects a passive receptive attitude which allows for the influence of new ideas related to previously unnoticed aspects of the environment. The following psychological analysis of a typical behavior sequence illustrates what we have in mind.

Subjects frequently start to separate the blocks correctly, but then some stop while others carry through to the correct solution. During this phase we believe S is guided by a vague sense of "size" as the important cue, though it is not "size" in the sense of volume as the tall, small-top surface area blocks (murs) are approximately the same volume as the short large-top surface area blocks (biks), and Ss very rarely confuse them in this phase. Some Ss can continue to operate on the basis of the height by top-surface area even though they can

not verbalize the rule they are using.³ Other Ss cannot. They stop, get confused, and either return to an earlier idea they had tried, or don't try anything for a while.

The successful S then is able to carry through to the correct solution on the basis of a rule not clear in his own mind. He is *more receptive* to impressions of this kind. The failure S on the other hand is more critical of such impressions. He may not be able to continue on the basis of an impression he cannot verbalize, and because this impression is difficult to verbalize, he gives up on it.

There is a notable similarity between our formulation of the role of receptive attitude in solving the H-K test and Heidbreder's concept of "spectator behavior."

In Heidbreder's extensive experiments on problem solution, O's task was to discover the rules of a game by trial and error. Her outstanding result was the existence of *spectator behavior*. The more common *participant behavior* consists in trying out hypotheses. In spectator behavior O has no hypothesis to test; all his guesses have been proved erroneous, and he can only make random responses and watch for some new hypothesis to emerge, as it often does after a while. Spectator behavior may perhaps afford an answer to the question of how hypotheses arise. The receptive attitude may be just what is necessary to allow some hitherto unnoticed aspect of the situation to take effect. (Woodworth and Schlosberg, 1955, pp. 821-22.)

Even if we grant that a passive, receptive cognitive attitude may facilitate solving the H-K test, it still is a long, logical leap to infer the strength of this kind of attitude from the number of libidinal oral responses on the Rorschach test. The logic cannot be made complete or rigorous at

³ We are confident that Ss cannot verbalize at this stage because usually Ss cannot verbalize the rule correctly even after having carried through to the correct solution. When, after having solved it, the S is asked for the correct rule, he typically stops, looks at the blocks, and slowly, hesitantly tries to put into words what the basis was. It seems quite evident that during his correct sorting of the blocks S does not have a verbalized form of the rule in mind.

this time, but we can note that the recent work in the area of psychoanalytic ego psychology may point the way. Some ego attitudes (e.g., receptivity) may be derived from instinctual forms of expression and be put to use by the ego in coping with reality (Hartmann, 1951).

A further specification of this in a form pertinent to our present results and interpretation is contained in Kris's formulation of the part played by "regression in the service of the ego" in creative thinking (Kris, 1951). In his formulation, an oral attitude on the part of the ego with respect to the unconscious, and the ability to suspend, temporarily, reality-testing, are considered necessary for the emergence of creative ideas.

SUMMARY

To determine some of the behavioral determinants of rigidity in one test situation, a study with three independent replications was done on the consistencies between the Hanfmann-Kasanin Concept-Formation Test (H-K test) and the Rorschach. Two Rorschach scores, taken from Holt's Manual for Scoring Primary Process Manifestations, were found to differentiate reliably between those Ss who could solve the H-K test within 30 minutes and those who could not. The first score was the number of image fusions — e.g., fabulized combinations — and was interpreted as measuring the ability to set aside, in the H-K test, the easily-seen and easily-verbalized aspects of shape and color in order to consider something different. The second measure consisted of the number of Rorschach responses with oral content or connotation, and was taken to indicate a passive receptive attitude favorable for considering new and different ideas — an attitude which would facilitate discovery of the correct solution on the H-K test. Furthermore, a composite index made up of the above two measures plus one based

on the number of Rorschach responses with aggressive content was found to differentiate very reliably between successful and unsuccessful Ss on each replication. Possible relations to formulations of Heidebreder (spectator behavior) and Kris (regression in the service of the ego) were briefly indicated.

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The Hibernating Syndrome

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In a recent unpublished talk as a participant in a symposium on Projective Techniques and Personality Theory¹, the present writer referred as follows to certain psychodynamics which she has frequently found in association with a picture of general withdrawal:

"In my thinking about it I have called this syndrome the Hibernating Syndrome. This name seems appropriate because the arresting thing about the Rorschach picture presented by this group of patients is the 'sleeping through the long winter' aspect; with its implications of the slowing up of vital energy-consuming processes, while they await the warmer, more hospitable climate; the Springtime, into which they can emerge. In other words, what I have frequently seen in these records is a personality intact, but withdrawn from the too-hard situation (the too-cold winter). Many of these patients carry a 'depressive' diagnostic label, and indeed they are withdrawn and secluded. But, as seen in the Rorschach, they are not withdrawn out of a wish to leave life. They are merely awaiting the day when it will be safe to emerge."

The following Rorschach protocol is given in full, including the long Testing the Limits section, because it is felt that this illustrates the potential capacity and the emergence which can take place, once the patient feels warm enough and safe enough that he dare come out. It seems worth adding that the writer has done therapy with a number of such patients, and has watched with something approaching awe, the growth which takes place, once they know that "it

is now Springtime, and that there is therefore nothing to fear."

The patient whose Rorschach is presented below is a 38-year-old, Negro male, who in boyhood received only a grammar school education. After his military service he took a course in cabinet making and since then has been successfully pursuing this work. He has been married approximately 12 years. There are no children.

The patient listed the following problems in referring himself for testing: Family troubles, due to his jealousy; insomnia; restlessness; over-dependence on his wife, and occasional difficulty in controlling his temper. He stated that he hopes to receive psychotherapy, explaining, "If I could learn to control my jealousy — it is not of other men, it is a jealousy of her time and interests. I want so much to do things that interest her, and if she doesn't show any interest, that upsets me very much. If I could only understand why I do it."

RORSCHACH EVALUATION

The outstanding aspect of this patient's Rorschach is the marked difference it indicates between present functioning and capacity levels. This is true, not alone in intellectual capacity. It is even more impressively true of a wide range of personality reactions. There is, however, a strange aspect to this personality potential, as the Rorschach pictures it. It appears as a hidden thing; almost as though within the functioning self, there were concealed a second self (so concealed that in very truth only "X-Ray eyes" could detect its presence). It is therefore, not a presently functioning personality picture at all; not even one only occasionally used. It is instead, present in dormant form only; intact,

¹ Joint Session of the American Orthopsychiatric Association and The Society for Projective Techniques.

RORSCHACH PROTOCOL

I.

1. "This reminds me of a bat."

I.

Q. "This would be the wings of the bat; this his head, and this — I think you'd call it his tuft or something — that sticks out — like the ears. This, of course is his back — and the body — his tail here."

Q. (Anything else to say about it?)

"As though its in a resting position, with its wings out (demonstrates by stretching his own arms out) .

II.

1. "This sort of reminds me of an abdomen."

II.

"Yes, (abdomen) this would be more or less like the waist of the person — the waist line here (2 upper red *Ds* indicated) and this like the hip part, and of course, then you imagine the legs, etc. That's about all."

Q. (Where one might see such a thing?)
 "The way I would see it, like the bone structure, as if you were looking at a skeleton."

III. 7

1. "And this reminds you of some sort of bone — some parts of the human anatomy — don't know exactly."

III.

Q. "Yes — the same thing as this other one (Card II). It gives generally the same outline. This would be, of course, the stomach. (At first pointed vaguely somewhere between center red *D* and *S*. Then definitely to *S*). And the bladder section in here — and then the general outline of the outer bone structure.

IV. 9

"Gee, I don't know. This one has me stumped — don't know what it reminds me of."

22

1. "Sort of an ox head."

IV.

1. Q. (Ox head read back?)

"Yes — in a sort of a way it gives you the impression of a bull with his head down, as if charging towards you. These would be the horns (upper side *Ds*) and this, of course, would be the mouth — as he had his head down to charge; (Lower *D* and surrounding *S* indicated) this, of course, would be the feet as he goes towards you."

V. 3

1. "This also reminds you of — sort of butterfly, I think."

V.

"Yes, this reminds me of a type butterfly I've seen — but it's very rare." It's a darkish butterfly and they mostly rest in those big yellow flowers. Of course, these would be his wings — and the head section here (upper *D*) and this his tail section.

Q. (Anything else to say about it?) No.

VI. 4

1. "This reminds me of a tortoise — sort of."

VI.

"Yes, this reminds me of a tortoise with his neck out — of course — and this — the shell of his back, and these the legs — protruding from his back — and this would be the rear end of him."

Q. (Neck out?)

"Well, a tortoise, as you know, if you touch him or something — they usually put their heads in — but when they are peaceful they put their heads and feet out. Might be in the process of going some place."

- Q. "Yes, you can tell, the shell part up, because most tortoises have like a sort of seam on top, I believe."

VII. 6

1. "It reminds you of little goats standing on their heads against rocks."

VII.

"Yes, it appears as though might have been, maybe enjoying themselves — and they run to pounce their little heads against the rocks and turn somersaults. That's the appearance it gives — as though they may be having fun."

Q. (Parts seen?)

"This would be the rocks (Lower D) and this the head and the little whiskers and of course, the neck line and his front legs — and this the mid section of his body — (usual neck) and this the hind quarter (usual face) and this the rear leg (usual feather) as he kicked up."

- Q. "Goat because of the form — of course — and by the pressing — well, this I would say would be the head section — against the rocks."

Q. (Why rocks?)

"I just said rocks; — could be any other thing, but I guess they would bump their heads against the rocks rather than against each other. I guess no other animal would be pushing against rocks like that."

VIII.

VIII. 4

1. "This gives me the effect of — some kind of animals — might be climbing on something — could be a racoon. This way he's stepping from something."

"If you hold it this way it gives you the impression — well, I would say it could be a bear, maybe in the polar region, and he could be stepping across ice. He's being very careful."

Q. (Racoon?)

"Yes, it could be a bear or a racoon — either one."

- Q. "Polar region because of the sharp peaks of whatever he's stepping on — and usually you associate this with a sort of cold atmosphere."

IX. 7

- I. "This reminds me of a picture I saw of the female — (long pause) — The lower section of the female."

X. 7

- I. "And this also reminds me of some of the sections of the same thing — except (voice fades out). Like the ovaries here and the different sections."

ANALOGY QUESTIONS:

CARDS IX AND X

F/C?

"Yes, it is — because usually in these book photographs they usually have colors. I guess for quick and positive distinction."

- Q. "Yes — (color helped). And then some of the shapes are almost identical to some of the parts."

IX.

"Yes, it could be — say the — even the womb — the vagina — at the bottom section, and this (upper orange) could be the ovaries — and of course — this would be the stomach."

- Q. (Where one would see such a thing?)

"I remember a picture I saw in a medical book — and it was very similar to this — they had different sections of the male and female anatomy and this reminds me of one section of it."

- Q. (What about it made it look particularly like an anatomy book drawing?)

"I guess the shape of it."

"Yes, this gave more of a scattered . . . This (Card IX) was more drawn in one section. This (Card X) more scattered sections. These (pink areas) would be more the bone structures — and this (blue area) the ovaries — and these (upper green) the tubes. And of course, this (upper grey D) would be the — can't think of the name — where it comes together."

"That's all, I guess."

TESTING THE LIMITS:

- II. (Ps described)

"Yes. I could see that very easily. It would be as though one animal is on his back — balancing the other. I would say the animal might be a buffalo or something of that nature."

- Q. "This would be the back of the animal and this would be the rear part, I guess — (usual clasped hands part) and this the front — with feet here."

- Q. "Buffalo because of the high peak here. You know they have a very high part on their back."

- Q. (Fc?) No, not used.

"I was going by the shape."

- Q. (Head?) — "I was thinking of this as the rear — but now that I look at it, this could be his head section and this his rear, as though braced. Ear here — and this his mouth and his front paw."

- Q. (Braced?)
"Yes, it seems as though he might be pushing."

- III. (As examiner said, "People," he replied). "Yes, this gives you the idea of two people, maybe beating drums. These the drums — leg section here and the hands and heads."

Q. "It would suggest women — because it gives the appearance that these might be their skirts blowing."

(Asked to use center *D*)

"Well, now this again brings in some tropical atmosphere. This (upper *D*) gives you the impression of some sort of monkey swinging."

Q. (Describe)

This could be — I think — a South American monkey — those very small cute little ones — and he gives the impression that he might be enjoying himself. And the people give the impression too of enjoying the music. This I don't know (center *D*).

(Various *FCs* offered)

"Bow tie maybe — Yes. Butterfly — I can't see. The shape isn't too much like it."

Q. "No — just the shape."

IV. (*FM* and *M* offered)

"Yes, it could be, sort of — oh, a gorilla type thing. Yes, it could be. It gives the impression of a sort of a big giant of a thing (hunched himself over) that can hardly move himself along."

Q. "It also gives the impression of someone dressed like a clown — sort of an acrobatic thing, like looking through his legs."

Q. "Clown because — I guess the sadness in the eyes here — you know — most clowns look very sad — as though he might be saying, 'pity me.'"

VI. (*Fc* offered)

"Yes, it would give you the appearance of — probably a leopard skin spread out to cure. Is that what they call it?"

Q. Leopard skin, I think, because of the texture — the light and dark.

X. (Asked to use *DS*)

a) "This (side blue) gives you the impression of some sort of big spider."

b) "This (lower *D*) gives the impression of two — don't know what you call it — maybe a beetle — one of those long things — not sure of name."

Q. "Beetle because it looks like two — with their heads together." c) "This (side brown) gives you the impression of a cricket."

Q. "Body section here, rear here, this the front because they usually go with their paws up. And this here (pink) doesn't

remind me of any animal in particular — I don't think." d) "And this (upper D) reminds me somewhat of a crab — two of them."

e) "This (pink) just reminds me of a landmark on a map." f) "This looks like some sort of musical note (usual wishbone)" g) "And here — it reminds me of maybe a nice little cute dog, as though he had just gotten up and is stretching his front paws." (demonstrated with a stretching gesture of his arms.)

VII. (As examiner offered card patient turned it.)

(Various FM and M offered.)

"Rabbit on dog — maybe — but I can't get the —" (voice fades out).

Q. (Describe)

"It would be sort of the same way as I described the goats — this the rear section here."

"Of course if you look at it this way — this could be two animals looking at each other. This could be the head and this the ear. But how they could balance themselves this way — they're too heavy."

"Oh, now I see what they mean by the ladies looking at each other — with the funny hair-do. Maybe could be two busy-bodies (laughed) — yes — now I see it."

"There's a lady in the movies — can't think of the name — made up to play character roles — sort of a busy-body — the eccentric type."

(Examiner returned to percept C, "cricket").

Q. "No, (color not used) just the shape, because a cricket, I believe usually is black."

Q. (If color was used in lower D)

"No, the shape more or less."

(Various FCs suggested)

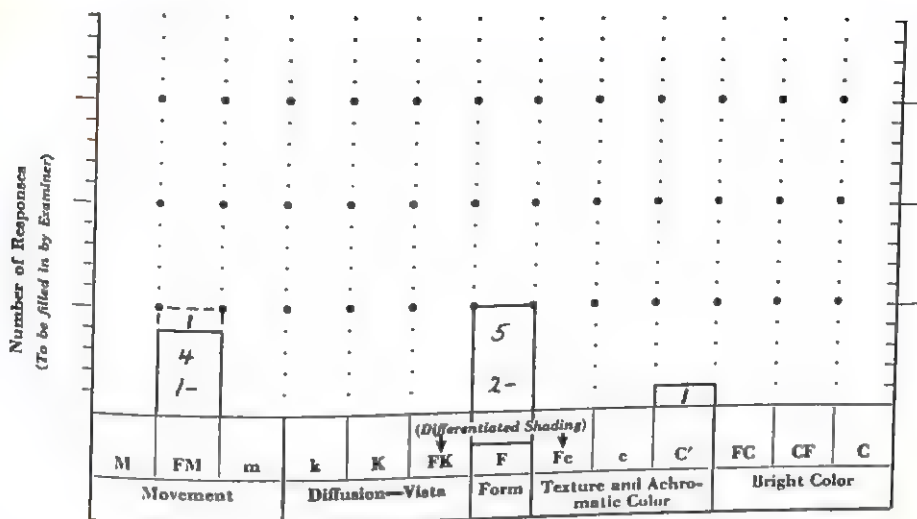
"That's what I meant. I didn't mean beetles. Yes, caterpillars. They seem to have some sort of joints in them (Fc).

Q. (FC used?)

"No, not really, but now that you mention it, caterpillars are green."

but non-participating (as though merely stored or preserved within the existing individual). It is like an en-

tity somehow shut off from outer existence. It seems best, therefore, at this point to offer two Rorschach in-



RELATIONSHIPS AMONG FACTORS

Total Responses (R) =
 Total Time (T) =
 Average time per response $\left(\frac{T}{R}\right)$ =
 Average reaction time for Cards I, IV, V, VI, VII =
 Average reaction time for Cards II, III, VIII, IX, X =

$$\frac{\text{Total F}}{R} = 50\%$$

$$\frac{FK + F + Fc}{R} = \%$$

$$\frac{A + Ad}{R} = 60\%$$

Number of P = 3

Number of O = 3-

$$(H + A) : (IId + Ad) = 6 : 0$$

$$\frac{\text{sum C} = FC + 2CF + 3C}{2} = 0$$

$$M : \text{sum C} = 0 : 0$$

$$(FM + m) : (Fc + c + C') = 4 : 1$$

$$\frac{\text{No. of responses to Cards VIII, IX, X}}{R} = 30\%$$

$$W : M = 9 : 0$$

Succession:

Rigid Orderly Loose Confused

(Place a check mark at the appropriate point on the scale above)

Estimate of Intellectual Level

Intellectual Capacity

.... Very Superior
 Superior
 High Average
 Low Average
 Dull Normal
 Feeble-minded

Intellectual Efficiency

.... Very Superior
 Superior
 High Average
 Low Average
 Dull Normal
 Feeble-minded

Note that this estimate is based mainly on the following:
 number and quality of W,
 number and quality of M
 level of form accuracy
 number and quality of O
 variety of content
 succession

Manner of Approach

W (90%) D (10%) d () Dd and S ()

Enter the location percentages in the spaces above. Compare these percentages with the norms shown in the box below, by placing a check mark opposite the appropriate range of percentages.

W	((D))	d	Dd and S
< 10% ((W))	< 30% ((D))	< 5% (d)	< 10% Dd S
10-20 (W)	30-45 (D)	5-15 d	10-15 Dd S
20-30 W	45-55 D	15-25 d	15-20 Dd S
30-45 W	55-65 D	25-35 d	20-25 Dd S
45-60 W	65-80 D	35-45 d	25-35 Dd S
> 60 W	> 80 D	> 45 d	> 35 Dd S

[4]

FUNCTIONING PERSONALITY (RORSCHACH I)

interpretations; one, the currently functioning personality, the other the "dormant" personality. It may be that, in later comparing or contrasting these two pictures, the meaning of the strange Rorschach phenomenon will emerge.

Evaluation of the Functioning Personality: The most immediate impression of this patient's personality functioning, is that he is markedly withdrawn. This withdrawal does not carry the impression of apathy; nor does it appear to be due to ego con-

striction or to any gross developmental lack or impairment. Rather, it seems as though the capacity to react affectively has been turned inward, so that such feelings as he experiences are associated with whatever the thoughts or phantasies which loom so meaningfully to him. At this point in the Rorschach analysis (focused on the quantitative aspects only) we cannot yet know the nature of the ego-involved ideas. We can, however, note that they are dominated by pleasure impulses, and in that sense are neither mature nor entirely reality oriented. In fact, reality testing is so little developed, that we can infer a marked reliance on wishful thinking, and an ensuing tendency either to deny or to disregard such reality aspects as run counter to these phantasy-dominated needs.

It should be added, that in spite of the above, the Rorschach picture is not one which suggests psychosis. The problem seems to stem from a need to re-structure reality to meet his emotional needs, as distinct from any impairment of intellectual functioning. His energy seems so wholly bound up with his efforts to preserve these inner "needs," that we can hypothesize that they have a strongly defensive function. In preserving them, and therefore passively submitting to a fixation on this level, he must have been attempting to preserve something very important to himself. What this is, we cannot know at this point, but the immature nature of this inner life makes it seem as though the fixation (or regression) centers around a youthful period; a time when he had something of value which he subsequently lost. Since this "something" is associated with a childhood type of self-preoccupation and self-assertion, we can further hypothesize that it was a small child's sense of self, as someone "loved" and therefore lovable, and that in some way his withdrawal had to do with a need to compensate to himself when, somehow, he experienced this love as no longer there for

him.

Turning now to the deeper insights offered by the patient's way of perceiving the blot material, we can add that emotional impact somewhere in his development became highly traumatic; causing "pain," both figuratively and literally. A tendency to take recourse in sickness is clearly observable, as though, it may be, to force from his environment the attention which once was given in response to sickness by the significant people of his past. Clearly, he felt himself in a "cold atmosphere" (to use his own words in Card VIII) with every need to be "very careful in stepping across the ice," which is part of this "polar region."

We can also note that some experience of smallness and helplessness, in the face of some assaultive and angry "beast" was experienced so terrifyingly as to leave the kind of imprint which precludes objective or rational re-evaluation. This childhood terror remained ingrained in such a way that it was not open to re-consideration as the boy grew older. Repression probably performed the immediate task of enabling some additional ego-growth to occur. To whatever extent this took place, however, it became silently defiant in nature; a secret self-concept carefully preserved from the hostility and danger without. The "tortoise" of Card VI, who "puts his head in when you touch him but when peaceful puts his head and feet out and might be in the process of going some place" seems a fitting description of the combination of self-protective needs and the secret defiance (sticking his neck out when alone). Since the threat which causes the tortoise to withdraw is so easily identified in this Rorschach with castration fears, we can assume that the need to ward off the danger took the form, as he grew older, of adding to his general feelings of inadequacy in the face of emotional impact, the sense of specific inadequacy in the sexual sphere. We can therefore, also assume that he was

destined, psychologically speaking, for marked sexual problems, of this unconsciously self-induced variety.

An additional Rorschach response seems worth quoting here, since it offers further insight into these present day "unconsciously self-induced problems." In a context which facilitates some reaction to the adult woman, this patient saw two little goats who were enjoying themselves as they ran to pounce their heads against rocks rather than against each other." This is not alone a masochistic reaction; it is one in which turning in of aggression because of fear of a fight is so specifically verbalized, that we can safely venture the idea that somehow, associated with his boyhood relation to the adult woman, he developed the need to avoid the combat, and instead, masochistically to hit his head against the stone wall. It is inevitable that such a patient would look for stone walls to hit his head against as he proceeded through life. It is also inevitable that both the fear of the punishment to come and the need to suffer at the hands of the woman would continue on, in classical "repetition compulsion" fashion. It therefore seems probable that his current anxiety attacks (as well as others he has previously had) stem from some situation which has been unconsciously "used" by him to re-experience the deprivations of his past. In order to effect any permanent relief in relation to present problems, therefore, something more than support is necessary. Since we can assume his present symptoms to be largely displacements of the past onto the present, long-term analytically-oriented therapy seems indicated.

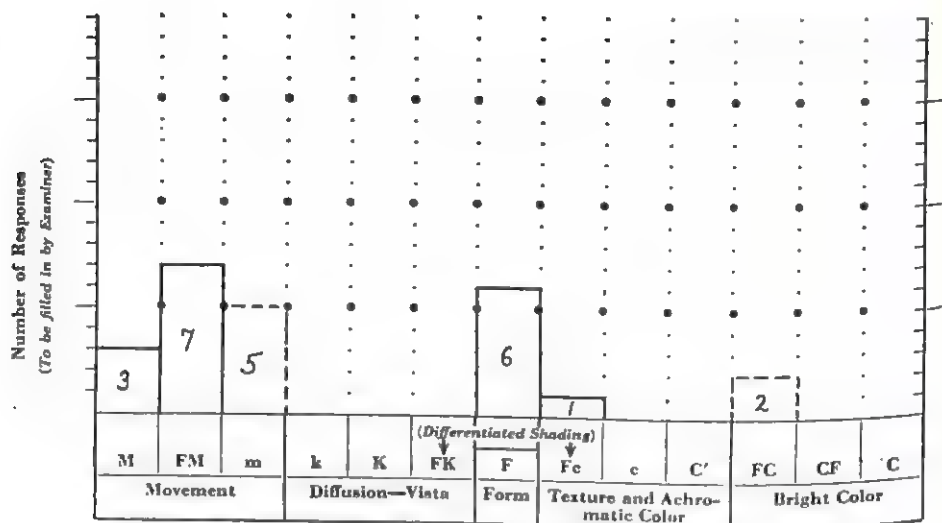
Before making this decision, however, it seems wise first to study Rorschach II (with the many new responses spontaneously offered in the Testing the Limits period).

Evaluation of the Dormant Personality: A first glance at the "dormant personality" picture (the 18 new responses evoked in the Testing the

Limits procedure) gives the impression of an individual also withdrawn, but without the "ersatz" satisfactions described above. Instead of escape into compensatory phantasy, we see here preoccupation with conflicting needs, in a way which suggests that the submissive masochistic adaptation is being challenged by the need for self-assertion and self-esteem. While this suggests increased tension, it also indicates that upstanding ego-drives form an important part of this inner turmoil.

The individual depicted here is not immature, either in a fixated or in a regressed sense. True, a tendency toward "pleasure phantasy" compensations is present, but its energies are seemingly bound up in a struggle for survival, to an extent which makes it clear that they are not affording satisfaction, nor providing reality compensation for the reality deprivation. Indeed, as pictured here, they appear to be experienced as inimical to the self-realization to which the ego is committed. Such self-realization demands active self-expression, and not phantasy equivalents. Moreover, the upstanding ego needs appear to have sound allies in this secret battle. Reality testing ability is in evidence. So, also, is some wish for closeness, with its accompanying goal of empathy. This latter quality, however, appears to be held down by some opposing effort to deny the wish for closeness. It is largely an untapped resource, as it appears here; but one which is prognostically important, should this patient be given therapy.

Turning now to such additional insights as the percepts themselves offer, the struggle becomes verbally dramatized, between the passive-feminine adaptation and the compensatory phantasy (which we may guess is concerned with masculine fulfillment. The people in Card II, for all that they are beating the drums, are women). However, we also glimpse a capacity to get "set" for the struggle, should conditions become favorable.



RELATIONSHIPS AMONG FACTORS

Total Responses (R) = 17

Total Time (T) =

Average time per response ($\frac{T}{R}$) =

Average reaction time for Cards I, IV, V, VI, VII =

Average reaction time for Cards II, III, VIII, IX, X =

 $\frac{\text{Total F}}{R} = 35\%$ $\frac{\text{FK} + \text{F} + \text{Fc}}{R} = \%$ $\frac{\text{A} + \text{Ad}}{R} = 59\%$

Number of P = 4 + 1

Number of O = 1 -

(H + A) : (Hd + Ad) = 13 : 0

sum C = $\frac{\text{FC} + 2\text{CF} + 3\text{C}}{2} = 0$

M : sum C = 3 : 0

(FM + m) : (Fc + c + C') = 7 : 1

No. of responses to Cards VIII, IX, X = $\frac{1}{17} = 4\%$

W : M = 6 : 3

Succession:

Rigid Orderly Loose Confused

(Place a check mark at the appropriate point on the scale above)

Estimate of Intellectual Level

Intellectual Capacity

... Very Superior
 ... Superior
 ... High Average
 ... Low Average
 ... Dull Normal
 ... Feeble-minded

Intellectual Efficiency

... Very Superior
 ... Superior
 ... High Average
 ... Low Average
 ... Dull Normal
 ... Feeble-minded

Note that this estimate is based mainly on the following:
 number and quality of W
 number and quality of M
 level of form accuracy
 number and quality of C
 variety of content
 succession

Manner of Approach

W (35%) D (65%) d () Dd and S ()

Enter the location percentages in the spaces above. Compare these percentages with the norms shown in the box below, by placing a check mark opposite the appropriate range of percentages.

W	D	d	Dd and S
< 10% ((W))	< 30% ((D))		
10-20 (W)	30-45 (D)	< 5% (d)	< 10% Dd S
20-30 W	45-55 D	5-15 d	10-15 Dd S
30-45 W	55-65 D	15-25 d	15-20 Dd S
45-60 W	65-80 D	25-35 d	20-25 Dd S
> 60 W	> 80 D	35-45 d	> 25 Dd S
		> 45 d	

[4]

DORMANT PERSONALITY (RORSCHACH II)

(The first "buffalo" of Card II, which is on his back and merely balancing the other, gives place to a buffalo who is braced, "as though he might be pushing.") Again, however, come the fears; expressed in Card IV through a need to deny. (The "big giant,"

while accepted, is hunched over so that he can hardly move along). But this denial of the power of the "giant" is seemingly not sufficiently effective. A second percept emerges; a "clown," identified as such "because of the sadness in his eyes . . . as though he

might say, pity me." The wish to continue on in the safety of being one whom the "giant" need not fear, but instead is merely someone to be laughed at, is clearly indicated. This suggests a need to deflate and reduce himself, which is surely a strong deterrent to a full-bodied ego effort to win out.

However, the "pitiful clown" mood lifts. The patient is able immediately after this percept, to struggle through to a point where he suddenly sees the adult woman (whom he had, when first offered, not been able to see). In place of the self-minimizing reaction, there is now a cynical description of the woman "like some woman who plays character roles in a movie; a busy-body; the eccentric type."

Perhaps the most impressive aspect of these "Testing the Limits" responses, however, is the evidence of capacity for joy and spontaneity; particularly as stirred up by the affective impact, with its implication of relationship needs. These reactions occur in percepts which have to do with youth. There is the suddenly recognized "swinging monkey" (described as "a very small cute little one, which gives the impression that he might be enjoying himself.") Immediately thereafter the joy of the "little monkey" is shared by the previously seen "people" in the same card. ("And the people give the impression too of enjoying the music.") The very last responses, again spontaneously seen, are not only in line with the above; they seem to point to a possible capacity for reactivating this glad way of experiencing life. First, there is the "musical note;" then a "nice little cute dog, as though he had just gotten up and is stretching his front paws." It appears worth adding that the examiner made a note to the effect that "patient demonstrated this with a stretching gesture of his arms."

What do these two different Rorschachs indicate, so far as this patient is concerned? What suggestions for therapy derive from this comparison?

Certainly the patient, as the functioning Rorschach represents him, is a "burnt child;" so hurt and so traumatized that like so many hurt children he has withdrawn into a sulking depression; with all its "I won't play" reactions. The "turtle" is in the shell, and the only pleasure left to him is the masochistic pleasure of knocking his head against stones. But, even in this Rorschach response, he thus knocks his head in order to keep from hitting the other one. In other words, we are made aware that preserving some former love object is the real meaning of this masochistic "sit down strike" reaction.

In the "Testing the Limits" section, we become eye witnesses to the original trauma. We also see, however, the joyous boy he was before the trauma took place. It is as though this little boy is still there, alive, although removed from participation; awaiting the day when he can "get up and stretch" and come out of his retreat.

This seems to be the important point, so far as therapy is concerned. Clearly, the situation has been too hard; the atmosphere "too cold," for this fragile little boy. And in this extremity, something somehow wise and adult and tender in him (possibly an activation of the memory of the one who before the trauma had taken care of him) has taken over the task of protecting the child who had no grown-up there for him. We may infer that (psychologically speaking) this "protective part" of the personality did what nature does for certain animals in the too-cold climate; by providing the defense of hibernation.

The therapeutic task, therefore, is to prove to the boy now grown older that "spring is here," and that it is therefore safe to emerge. This is a task which requires on the part of the therapist both patience and great capacity to accept (on whatever level it is necessary to indicate "acceptance" to the child within this man). Part of the reason for the importance of patience on the part of the thera-

pist may already be implicit to this Rorschach interpretation. It has become explicit to this writer in doing therapy with other patients of this type. It is not alone necessary to prove to the slumbering "child" that it is safe to emerge; the "protective parent" part of the patient, which maneuvered this hibernation, must also feel that it is safe to permit the child "to come out into the open." By now, as with so many protective parents, he

has become the "over-protective parent" with a real stake in continuing this adaptation.

Gradually, however, if both the "boy" and the introjected "protective parent" parts of this patient are convinced that it is truly safe, the emergence can be accomplished. After that, analytically oriented therapy may be (cautiously) inaugurated.

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The Relationship Between the Rorschach Shading Response and Other Indices of Anxiety¹

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The significance of the shading response on the Rorschach has been a subject of controversy for almost as long as has the Rorschach method itself. The original interpretation of this determinant, as reported in a paper by Rorschach and Oberholzer (1942), related it to "the capacity for affective adaptability but (it) also indicates a timid, cautious and hampered sort of adaptability." Later writers (Beck, 1951; Binder, 1937; Booth, 1937; Hertz, 1940; Klopfer, 1937; Klopfer et al, 1938) tended to agree that the *chiaroscuro* or shading response was in some way related to uneasiness, anxiety, and fear. Hertz (1940), in a summary of the literature on this particular determinant, states that the "evidence, while sparse, appears to verify the relationship between uneasiness, anxiety, depression, and fear and the K or Ch categories."

However, as the Rorschach became subjected to experimental study and verification, there appeared to be some disparity between the theoretical claims, based on clinical experience with the instrument, and the research results (Guirdham, 1936; Young & Higgenbotham, 1942; Vernon, 1933). One possible explanation for this is that many of the research studies are based on subjects drawn from college populations or populations quite different from the one on which the original hypothesis was based (Vernon, 1933; Wischner, Rotter & Gill-

man, 1947). Shading may not be indicative of anxiety per se, but may represent some more general property of personality that indicates that, when the person is under stress, he will react with anxiety. Thus, it could be that with a nonpsychiatric population there is not a consistent relationship between the shading response and other measures of anxiety. The original Rorschach hypotheses were based on clinical patients, and there is no reason to assume that they necessarily apply to other populations. Therefore, it appears that in order to investigate the problem it is necessary to go to the sort of population from which the original supposition arose.

However, there are investigations which have utilized psychiatric populations and have not found the hypothesized relationship (Guirdham, 1936; Young & Higgenbotham, 1942). There are several possible explanations for the failure of these studies to substantiate the original claims made for the shading determinant. First, the question of the validity of the interpretation should be raised. Perhaps there is no relationship between anxiety and shading on the Rorschach, and the results of studies indicating such a relationship are caused by purely chance factors. There is not enough evidence to support or refute such an explanation. The experience of many clinicians seems to convince them that there is such a relationship, yet it has indeed been a nebulous phenomenon to measure and evaluate. This leads to a second possible explanation for the negative results obtained by many of the studies in this area. It may well be that there is some relationship between anxiety and the use of shading

¹ This article is based upon a portion of a doctoral dissertation completed at the University of North Carolina, August, 1958. This paper was presented at the 1959 meeting of the Eastern Psychological Association, Atlantic City, New Jersey. The author wishes to express her appreciation to E. Earl Baughman for his help and encouragement during the planning and completion of this study.

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in Rorschach response, but the methods presently used to determine such usage are not sensitive in many instances to pick it up.

Sarason (1954) in reviewing this determinant concludes that the shading response appears to have behavioral significances, but one of the major problems in investigating these significances is the low frequency of the shading response. He suggests that it may be necessary to create a new series of ink blots which maximizes the presence of shading. In this way we can obtain more reliable scores and more significant correlations with validity criteria.

Holtzman (1958) has created such a series of blots which render essentially normal distributions for six variables, including shading. Although such a procedure solves some major problems, the use of different blots means sacrificing much of the information already accumulated on the basis of the standard Rorschach cards.

Another approach to the problem is offered by an inquiry procedure developed by Baughman (1958). The free association used is the standard one. However, during the inquiry the subject is presented with the original Rorschach card and a series of other cards in which various determinants have been omitted, e.g., color and shading. Eventually nothing but the outline of the blot remains (See Baughman, 1959). These cards are presented with a paired comparison technique, and at each stage of presentation the subject is questioned whether the percept is still present in the new card, in which card is it clearer, and what is it about the card that makes one better. Results from two studies, one based on nonpsychiatric adults (Baughman, 1959) and one based on nonpsychiatric children (Marimon, 1958), indicate that this method elicits shading as a determinant more often than does the regular inquiry procedure. The Baughman paired comparison inquiry results in

a greater dispersion of scores for the shading responses, so that there is greater discrimination among subjects. This affords a better opportunity to discover any relationships that may exist between the shading determinant and other variables. This method meets the criterion set by Sarason while at the same time it preserves the information already accumulated about the standard Rorschach blots, much of which would have to be sacrificed should an additional set of blots be constructed. The use of this paired comparison inquiry with a psychiatric population should provide a fruitful means of investigating whether shading on the Rorschach correlates with other measures of anxiety that are also used in the clinic.

METHOD

Problem: This study was designed to test the following hypotheses: 1. With a psychiatric population, the shading response on the Rorschach will show a positive correlation with other instruments used to measure anxiety in the clinic;

2. The use of the Baughman paired-comparison inquiry will lead to a greater number of shading responses than obtained with the regular inquiry procedure;

3. The use of the Baughman procedure will enhance any relationships found between shading on the Rorschach and other measures of anxiety.

Subjects: Sixty psychiatric patients were chosen from the out patient and in patient services at North Carolina Memorial Hospital. They were chosen on the basis of three criteria: first, that they not be considered psychotic; second, that there be no question of organic impairment; and, third, that they be able to read.

Procedure: All subjects were tested individually. They were first interviewed in a standard manner to obtain information regarding their family, occupation, history of illness, etc. Then, on the basis of their behavior during the initial interview and be-

fore any further testing, subjects were rated on a scale adapted from Lauterbach (1956). On the first part of this scale the patient was rated for presence or absence of specific overt clinical signs of anxiety, such as wringing hands, halting speech, etc. This score is referred to as Observer's Rating I. On the second part of the scale, subjects were rated on a seven point scale of overall impression of anxiety. This rating was a subjective evaluation and is referred to as Observer's Rating II. Subjects were then administered two scales, Vocabulary and Word Fluency, from Thurstone's Primary Mental Abilities (Thurstone & Thurstone, 1949), followed by the Rorschach. Thirty of the subjects received the regular Rorschach inquiry, and the other thirty received the Baughman paired comparison inquiry. Subjects were then administered several scales from the MMPI, including the Welsh Anxiety Scale (1956) and the Taylor Anxiety Scale (1953).

The two groups of subjects were first compared on the basis of age, intelligence, education, and total number of responses to the Rorschach. Rorschach records were scored by an independent scorer as well as by the examiner to determine interscorer reliability. On the basis of the weighted shading scores from the Rorschach, both groups of subjects were compared with the other indices of anxiety, namely the Welsh and Taylor scales, Observer's Rating I, and Observer's Rating II.

Because at least one previous study (Allerhand, 1954) has related the texture response to overt signs of anxiety, this determinant was investigated separately. Because many records contained no texture responses, within each major group, subjects were divided into subgroups according to whether they had used the texture determinant. Using the Mann-Whitney nonparametric statistic (Siegel, 1956) these subgroups were then compared on the basis of scores on the Welsh Anxiety scale, the Taylor Anxiety scale, Observer's Rating I, and Observer's Rating II.

RESULTS

The two major groups of subjects were comparable in terms of age, PMA scores, education, and total number of responses to the Rorschach. Table I shows these comparisons. The interscorer reliability for the Rorschach shading scores ranged from .95 to .98. This interscorer reliability was based on the total number of responses involving shading and the sum of weighted shading score for each procedure. The particular kind of shading, e.g. Y, V, T, did not enter into the reliability.

The mean total number of shading responses for the paired comparison inquiry was 14.83 and for the regular inquiry, 5.50. The mean sum of weighted shadings for the paired comparison inquiry was 18.70 and for the regular inquiry, 5.83. In both instances the difference between the two

TABLE I. Group Comparisons on Some Basic Variables

	Group A N = 30	Group B N = 30	t value ¹
Total Responses (R)	$\bar{X} = 21.27$ SD = 10.04	$\bar{X} = 18.90$ SD = 8.09	.97
Age	$\bar{X} = 34.10$ SD = 9.69	$\bar{X} = 38.67$ SD = 11.47	1.67
Education (in years)	$\bar{X} = 11.90$ SD = 2.82	$\bar{X} = 11.87$ SD = 3.63	.04
Vocabulary Score (PMA)	$\bar{X} = 32.87$ SD = 13.14	$\bar{X} = 30.00$ SD = 13.53	.83
Word Fluency Score (PMA)	$\bar{X} = 36.93$ SD = 10.29	$\bar{X} = 34.27$ SD = 12.65	.89

¹t (.05, df 58) = 2.00

TABLE II

Product Moment Correlation Coefficients* Between Weighted Shading Scores and other Indices of Anxiety.

	Group A (Baughman Inquiry) N = 30	Group B (Regular Inquiry) N = 30
Welsh A	.10	.05
Taylor A	.12	.06
Observer's Rating-I	.08	.30
Observer's Rating-II	.10	.22

* $r(p = .05) = .36$

inquiry procedures was significant beyond the .01 level (Kolmogorov-Smirnov two sample test, in Siegel, 1956), confirming hypothesis 2.

Table II shows the comparisons of the weighted shading scores of both groups with the other indices of anxiety, namely the Welsh Anxiety scale, the Taylor Anxiety scale, Observer's Rating I, or total number of clinical anxiety symptoms, and Observer's Rating II, the overall impression of anxiety. None of the product moment correlation coefficients was significant. These results failed to confirm hypotheses 1 and 3.

The relationship between the presence or absence of texture responses and the Welsh Anxiety scale, the Taylor Anxiety scale, and Observer's Rating I was not significant. However, there was a relationship found between the presence of the texture response and the Observer's Rating II, the overall impression of anxiety as rated on a seven-point scale. This relationship was significant at the .025 level for the paired comparison inquiry group and at the .02 level for the regular inquiry group. While these results lend some support to Hypothesis 1, they fail to confirm Hypothesis 3.

DISCUSSION

The point has been made previously that one of the major difficulties in the validation of the interpretation of the shading response on the Rorschach has been the low number and the skewed distribution of shading

scores obtained. It has been stated that a larger number of shading responses, as well as a greater dispersion of shading scores, would enhance the relationships found between shading and validity criteria. This difficulty was overcome in this study through the use of the Baughman paired comparison inquiry. The use of this procedure led to a significantly greater number of shading responses, although the total number of responses to the Rorschach was not greater. Yet neither inquiry procedure revealed a significant relationship between shading per se and other anxiety measurements used in the clinic.

The texture response, investigated separately because of the findings of at least one previous study, showed a significant relationship with a measure of general overall clinical impression of anxiety. Contrary to expectations, the greater number of shading responses obtained with the paired comparison inquiry did not enhance the relationship found. Both the regular inquiry and the paired comparison inquiry showed essentially the same relationship between presence of the texture response and scores on other clinical indices of anxiety.

The fact that the texture response was correlated with the overall impression of anxiety may help explain the source of the original hypothesis, for this was the only validity criterion the early Rorschach workers had available. When they referred to anxiety, they were talking about the clinical impression they had of the patient. Later attempts to measure and evaluate anxiety have included patients' introspective reports and have led to such instruments as the Taylor and the Welsh scales. Yet the measure of anxiety as obtained by such scales does not appear to be related to the measure of anxiety as obtained by shading scores on the Rorschach or by a clinical impression of the patient. The data obtained in this study, using several different measurements of anxiety, lead to the question of

whether anxiety as we use the term is a unitary trait. Are the various methods we use to measure anxiety getting at different aspects of the same thing or are they measuring entirely different phenomena? The area of intelligence offers an analogy. Spearman (1904) viewed intelligence as something basic to the person, a general attribute which may be expressed in many different ways. Thurstone (1938), on the other hand, wrote of several separate kinds of abilities that go together to make up what we call intelligence. These two approaches can also be considered in regard to such constructs as anxiety. It may be that anxiety is something basic to the individual and, if present, is detectable according to any of the measures that we currently employ. This point of view is somewhat analogous to Spearman's views regarding intelligence. The alternative view is that anxiety is a non-unitary construct, and that we are subsuming many different behaviors under one term. This view would be analogous to Thurstone's approach to intelligence. The data from this study support this latter view. They indicate that when people talk about anxiety in the clinical situation they are not necessarily talking about the same thing. However convenient it may be to conceive of a construct such as anxiety as being unitary, it can lead only to confusion when the instruments by which we ascertain the anxiety do not corroborate each other.

While these data were being collected, questions were asked by psychiatrists about the results of certain patients' tests. When the information was given, there was often some controversy over it. A patient may have obtained a high score on the Welsh Anxiety scale, but the psychiatrist might question the results, for the patient showed virtually no signs of anxiety on the ward. A good example of the dilemma was a woman who reported that she woke up early in the morning and began to worry desper-

ately about the many problems plaguing her. However, she would lie quietly in bed, and, when the nurses came by to check, she would pretend to be asleep. On the ward she did not go around displaying such symptoms as hand wringing and nervous mannerisms. The nurses' reports indicated that she slept well and did not appear anxious. Nevertheless she was constantly tormented by recurrent worries, but apparently she did not react to these with some of the more common symptoms. Was this woman anxious? In terms of over clinical symptoms, no. In terms of other measures, such as an introspective scale, yes.

It appears, then, that anxiety as the term is used clinically is closely related to the method of measurement. The measurement may be relatively objective, such as a psychological scale, or it may be based upon a clinician's impression of a patient. The evidence from this study indicates that such different methods of measurement will lead to different conclusions. To consider both methods as adequate procedures for evaluating "anxiety" is bound to lead to difficulties in communication. It may be more accurate and less confusing to refer to different kinds of anxiety or to use different terms for the various types of behavior observed.

SUMMARY

This study was designed to investigate the validity of the interpretation of anxiety from the shading response on the Rorschach. It was hypothesized that (1) the Rorschach shading score would show a positive relationship to other clinical measures of anxiety; (2) the use of the Baughman paired comparison inquiry would lead to a greater number of shading responses; and, (3) thus enhance the relationships found between shading and validity criteria.

Sixty psychiatric patients were interviewed and rated on two scales of anxiety, one based on the number of overt clinical symptoms, and one

based on an overall impression of anxiety. Subjects then received two subtests from Thurstone's Primary Mental Abilities, the Rorschach, and several scales from the MMPI, including the Welsh Anxiety Scale and the Taylor Anxiety Scale. Thirty of the patients received the regular Rorschach inquiry procedure, and the other thirty received the Baughman paired comparison inquiry procedure.

Results indicated that:

(1) The Baughman inquiry procedure resulted in a significantly greater number of shading responses, although total number of responses to the Rorschach was comparable for the two inquiry procedures.

(2) On the basis of weighted shading scores neither inquiry procedure showed a significant relationship between shading *per se* and the two anxiety measures based on the interview or the Welsh Anxiety or the Taylor Anxiety scales. The greater number of shading responses obtained with the Baughman paired comparison inquiry procedure did not lead to higher correlations with the validity criteria.

(3) The presence or absence of the texture response showed no significant relationship with the total number of clinical symptoms or the Welsh or Taylor scales. However, it did show a significant relationship with the overall impression of anxiety. This relationship held for both inquiry procedures.

(4) The data raised some questions regarding the use of the term anxiety and whether such a term can be considered a unitary construct.

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The Influence of Card Order on the Stimulus Value of the Rorschach Inkblots

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Since the earliest development of the Rorschach test theorists have speculated on the significance of the individual inkblots. Rorschach (1942) himself discussed the qualities of each plate and suggested reactions which might be elicited on the basis of such characteristics. A similar practice was followed by later theorists (Bochner and Halpern, 1945; Phillips and Smith, 1953). A recent review (Baughman, 1958) has reported on several studies devoted to the establishment of an empirical foundation for what had been clinical intuitions regarding the various plates. Since that review was made some studies have employed the Semantic Differential of Osgood, Suci and Tannenbaum (1957) as the instrument for assessing the significance of the inkblots thereby adding new dimensions to our understanding of the stimulus value of these test materials (Little, 1959; Rabin, 1959; Zax and Loisel, in press).

Many of these studies have provided valuable data which controvert intuitive impressions about the meaning conveyed by the blots thereby affording a sounder basis for the interpretation of responses. Nothing, however, has been done to determine the extent to which the discovered patterns are simply a function of blot structure or whether the order in which the cards are presented is a factor in the impression conveyed. Since the plates are nearly always administered in the standard order such a distinction may appear trivial. From the practical viewpoint of interpretation, however,

it takes on considerable significance. For example, it may be found that Card I, which has surprisingly been rather consistently rated as highly potent and of negative value (Little, 1959; Rabin, 1959; Zax and Loisel, in press) when presented in the usual position, is viewed much more positively when some control is held over order. In that case difficulty in dealing with this plate is more likely a function of the fact that the situation is a new and unstructured one than any disturbing quality attributable to configurations of the blot. Similar reasoning might apply to the interpretation of reactions to other blots which, by virtue of their position in the usual series, offer new and unexpected challenges.

Only the studies of Rabin and Sanderson (1947) and Maradie (1953) have addressed themselves to any aspect of this problem. In the former study, tests given in the usual order were compared to ones given with the plates presented in the reverse order. While no tests of significance were done, the orthodox order of presentation was noted to result in a higher $W\%$ and $F+\%$. Maradie was concerned with the effect of card order on productivity. Using 10 different orders in a Latin Square design he found that regardless of order of presentation the later appearing blots elicited more responses than the earlier ones.

It is the purpose of this paper to apply the Semantic Differential in an investigation of the influence of the order of presentation on the stimulus value of the Rorschach inkblots. Because of the exploratory nature of this study no specific hypotheses will be advanced.

¹ The authors gratefully acknowledge the assistance of F. G. Benham, University of Rochester in processing the data of this study.

METHOD

Ss for this study were two groups of 40 female undergraduate students at the University of Rochester, none of whom had ever taken the Rorschach or seen the blots before. The mean age of one group was 19.62 ranging from 18 years 3 months to 20 years 9 months. For the other group the mean age was 19.35 with a range of from 18 years 3 months to 21 years 4 months.

Seven scales from each of the three Semantic Differential factors were selected on the basis of their loadings and judged relevance to the inkblots. These scales are the same as those used in an earlier study by Zax and Loisel (in press). The scales were randomly arranged in 10 different orders and booklets were assembled in such a way that the 10 orders fell in random positions providing a control for any order effects which might operate in the makings of successive ratings.

Both groups of Ss were given these booklets containing, in addition to the rating scales, the standard Semantic Differential instructions used by Osgood, et al. (1957) with minor modifications to account for the fact that inkblots and not verbal concepts were being rated. After reading the instructions and having been allowed an opportunity to ask questions, each S was seated in an individual testing booth with a standard set of inkblots and made the 21 ratings for each card. In the case of one group (henceforth referred to as Group S) the blots were presented in the standard order. In the case of the second group (henceforth referred to as Group M) the cards were arranged in 10 different orders according to a Latin Square design so that each card appeared in each position only once and was preceded and followed by a given card only once. Each of these orders, which are listed by Maradie (1953), was used with four randomly selected Ss. In both groups all ratings were com-

pleted in from 20 to 50 minutes.

RESULTS

Ratings for each card on each of the 21 scales were tabulated separately for both groups and an analysis of the directional trends was made. Ratings in position one, two and three were combined as were ratings of five, six and seven. Thus for each scale the groups were compared on the number of ratings nearest the left end of the continuum, the number of neutral ratings (position four), and the number nearest the right extreme of the continuum. The chi square technique was applied to the 210 comparisons (21 ratings for each of 10 inkblots). The results of these analyses are found in Table I.

TABLE I
Scales and Cards on Which Significant Differences Were Found Between Groups.

The capitalized term denotes the direction in which Group S exceeded Group M.

Cards	Scales
I	wise-FOOLISH, large-SMALL, ANGULAR-round, HOT-cold, RECKLESS-cautious, SHARP-dull
II	FAIR-unfair
III	FAIR-unfair, hard-SOFT, strong-WEAK
IV	kind-CRUEL, fast-SLOW
V	tense-RELAXED
VI	BEAUTIFUL-ugly, CLEAN-dirty, angular-ROUNDED
VII	BEAUTIFUL-ugly, CLEAN-dirty, large-SMALL, ACTIVE-passive, FAST-slow, HOT-cold, SHARP-dull
VIII	clean-DIRTY, fair-UNFAIR, kind-CRUEL, HARD-soft, MASCULINE-feminine, hot-COLD, TENSE-relaxed
IX	kind-CRUEL
X	rough-SMOOTH

It will be noted that significant differences were found in a total of 32 of the scales. On a purely chance basis it would be expected that approximately 11 analyses out of the 210 would achieve significance at the five percent level.

To check the possibility that this number of significant chi-squares was

not simply a function of the unreliability of the rating scales, it was felt that comparisons should be made between the group which rated the cards in the standard order and a different group which had likewise rated the cards in the usual order. Since the ratings of a group of 40 males of approximately the same age and education were available they were used for this purpose. It was found that there were significant differences between these groups on only 13 scales, essentially what would be expected on a chance basis. This lent weight to the contention that most of the differences between Group S and Group M stemmed from the order in which the blots were rated.

In interpreting Table I it should be kept in mind that in only 16 of the 32 scales showing a significant change was there actually a reversal in rating pattern, i. e. a predominance of ratings toward the left side of the continuum in one group and a predominance of ratings toward the right side in the other. Even when this was the case the reversals were not extreme ones. In the most typical case there were nearly equal numbers of ratings toward the extremes in Group M while in Group S there had been a clear predominance of ratings toward one of the extremes. Thus, for example, it would be most accurate to say that Group S saw the first card as more foolish, smaller, more angular, hotter, more reckless and sharper than did those in Group M. This does not imply that Group M viewed blot I as wise, large, rounded, cold, cautious and dull to any significant degree.

DISCUSSION

In interpreting the results of this study it is necessary to consider the possibility that some of the significant chi-squares reported in Table I are attributable to chance. Therefore only the blots showing change on the greatest number of scales can be considered to have been affected by the changed order of presentation. An in-

spection of the table reveals that three of the cards are therefore particularly noteworthy, I, VII, VIII. On Card I significant differences were found on six scales while on each of the others seven scales showed significant changes.

The changes in the impression conveyed by Card I when its position is altered are not surprising although the nature of these changes is not easily interpreted. It has often been thought that Card I as the first in the series of unstructured stimuli posed a particular threat. Earlier studies (Little, 1959; Rabin, 1959; Zax and Loisel, in press) revealed that it was indeed evaluated negatively, was seen as potent and active. The most clear cut change resulting from the randomization of the order of presentation is that on several dimensions of the activity factor it is seen as being less active. On the other hand there is a significant change toward a more positive evaluation on only one of the evaluative scales and toward less potency on only one of the scales from that factor and it is presumably these features which should logically be most closely related to threat. Ignoring the matter of factor structure, however, an examination of the individual scales which changed reveals that when the position of Card I is altered it is viewed as wiser, larger, more cautious and duller all of which, with the exception of larger, suggest benign or perhaps more neutral qualities than foolish, angular, hot, reckless and sharp. Parenthetically, it should be noted that in the vast majority of scales which did not show significant changes there was a trend for more Ss to view the blot positively and attribute to it less potent qualities.

The findings related to Card VIII are in keeping with what might have been expected. When it is rated as the first of a series of all-colored blots which follows four achromatic ones, it is viewed as dirtier, crueller, more unfair, harder, more masculine, colder and more tense than when its position

varies. Difficulty in dealing with this blot may therefore be viewed in part as the reaction to a sudden change in the nature of the stimulus after S had developed something of a set for what was coming. The actual configurations in the blot or particularly the color may therefore be less crucial elements than has been thought.

The changes in seven of the scales on which Card VII was rated are interesting and somewhat surprising. Apparently in its usual position in the series it is a more attractive stimulus (more beautiful, clean, small, active, fast, hot, sharp) than when its position varies (more ugly, dirty, large, passive, slow, cold, dull). The fact that it is usually the first broken blot to follow three which are darker in color and unbroken may account for this. Difficulty in dealing with VII in spite of the relief it seems to offer as a stimulus may be a more serious sign than has been thought.

The fact that relatively few changes in ratings were found on Cards II, IV, IX and X is also interesting. It suggests that the blot qualities themselves override any influence their position might have on the impression they convey.

SUMMARY

Two groups of 40 females rated the Rorschach inkblots on 21 of the Semantic Differential scales; seven from each factor. One group (Group S) rated the blots in the standard order while the second group (Group M)

made ratings with the cards being presented in 10 different orders following a Latin Square design. Four Ss selected at random were presented with the plates in each of the 10 orders. It was found that on Cards I, VII and VIII there were significant differences in the distributions of ratings on six, seven and seven scales respectively. The implication of these findings for the interpretation of responses to each of these blots was discussed.

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BOOK REVIEWS

Loosli-Usteri, M. *Manuel pratique du Test de Rorschach*. Paris: Hermann. 1958. 216 pp. \$4.50.

This practical manual of the Rorschach Test is an enlarged and revised edition of one originally published in 1938. Its Swiss author died recently. She was one of the earliest writers on the test; her first Rorschach work appeared in 1929. The new edition contains much more information than does the 1938 one, making the manual more helpful both in the interpretation of single test records and in arriving at a theoretical understanding of the test. The first edition dealt primarily with children's records and its sample records were those of children. The new book presents fairly extensive interpretations of six individual records, all six obtained from adults. The author's interpretation of the records and of the theories underlying the test are essentially the same as those of the majority of Rorschach perceptualists. It rests on two main principles. One, that formal aspects as well as verbal content of test responses are indispensable for best results. Second, that certain psychoanalytic generalizations, especially those concerning the lasting influence of early childhood subject-parents relationship and of psychosexual development, can be applied to the test findings and can make them more meaningful. Loosli-Usteri belonged to the pioneers who contributed to the test after publication of the "Psychodiagnostics."

The author emphasizes the complexity and subtlety of the interpretation of test data. According to her (and she is not alone in this belief), the interpretation cannot be done routinely (or mechanically) because it partakes of both art and science. Nevertheless she tries to be as systematic, as explicit and discursive, as possible. The clear and succinct way, in which she formulates most of the rules used by her in drawing conclusions from the scored test data or directly from verbal content, is one of the great assets of this manual. The author thus appeals both to the practical clinician and to the theorist in search of hypotheses. Lucidity and brevity are outstanding characteristics of the author, who was an enthusiastic and successful teacher.

The examiner is told to keep the subject good humored. He should exert pressure to obtain at least one response per plate but should not jeopardize the subject's willing co-

operation. Loosli-Usteri did not include, in her interpretation of the record, responses spontaneously added during the inquiry nor did she omit responses which the subject tried to withdraw later, during the inquiry. Neither testing of limits nor stopwatch were used. On the other hand, following Morgenthau, the author made it a point to ask which plates were liked best and which least because she took very seriously the idea that each plate tests a specific attitude. Thus she subscribed to Mohr's notion that plates I and IV reflect a basic attitude toward father and plates VII and IX measure attitude toward the mother. The father element is associated with the dark or black color, the mother element with the white central colors. As we know, such facile applications of psychoanalytically inspired symbols are not valid.

The author divided the process of test interpretation into four distinct phases. In the first one, the tabulated components (symbols) and their numerical ratios are analyzed. The second phase deals with shocks (color, dark, initial or plate I, movement, etc.), inhibitions and defenses. Loosli-Usteri had a long list of shock criteria and consequently found shocks in a large percentage of records. The manual has a table of the frequency of each shock in records of 100 normal men and 70 normal women, which is a rare bit of statistics. She gave many other statistical details about these 170 adult records. In addition, she provided norms based on records of 65 Geneva boys and 63 Geneva girls, between the ages of 9 and 12 years. The third phase of interpretation consists of a search for components which could be interpreted symbolically. Here is room for intuitive "educated guesses". The author rightly pointed out that either a formal aspect or verbal content can convey information, symbolically disguised. A synthesis of all conditions is attempted in the last phase.

The manual is limited to personality description and contains but few brief and incidental references to neuropsychiatric diagnoses. In its essentials it follows the strict Rorschach tradition as does the vast majority of publications on the test. The human movement is viewed as an obstacle in adaption and an (apparently direct) expression of unconscious instincts, of the "interior attitude"; therefore repression of M (or its psychological correlates) facilitates adaptation to reality. The color responses are divided primarily in-

to deep and superficial ones (according to Binder's scheme), but nothing is said about the division of color responses into signs of positive and negative emotional attitudes, except that red shock (in whatever plate) indicates repression of aggressiveness and a sense of guilt. Loosli-Usteri believed that dark-shock indicated "constitutional" anxiety and that the light shading responses were highly and positively correlated with "acquired" anxiety; no light shading, no "acquired" anxiety. Yet she subscribed to the statement, supported by her own data, that in normal subjects, light shading responses are frequent when color responses are frequent, and vice versa. If the absolute number of light shading responses measures the degree of "acquired" anxiety, normals would have to be classified as more anxious than the numerous neurotics and psychotics who produce fewer shading responses than do the normals.

In this complex field progress is slow. What we need most of all is a systematization and classification of the basic concepts and of the process of interpretation. Loosli-Usteri has made a distinct contribution in these areas and has given us, in addition, many a specific point about the meaning of this or that test reaction. These fine points of analysis will be studied eagerly by the clinical psychologist who wants to improve his skill and knowledge.

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Meili-Dworetzki, Gertrud. *Lust Und Angst: Regulative Momente in der Persönlichkeitsentwicklung Zweier Brüder.* (Pleasure and Fear: Determinants of Personality Development of Two Brothers). Bern: Verlag Hans Huber. 1959. 112 pp. \$2.50.

This is an observational study of two well adjusted brothers, one of whom was motivated predominantly by a search for pleasure and the other by the desire to avoid and conquer fear. The data consist of diary entries of the boys' mother, observations by the author (the children's neighbor), comments by other observers, and the boys' own verbal expressions of their attitudes and feelings. The study ended when the boys were twelve and nine years respectively. No formal test data are included (and apparently no testing was done). The psychological differences between the brothers were striking from birth and the author shows how these basic

differences persisted through the years and how modifications in the boys' attitudes without any basic personality change could be observed during the nine year period.

This monograph is not only a demonstration of the observational method in personality research but it shows (though only on one pair of subjects) the growth of two basically different attitudes. The older brother followed the pleasure principle; his desires were far more important to him than the objects of his desires. He looked upon the world as a source of pleasure and at times of disappointments; his personal development required that he gradually learn to control the primary expansiveness with an increasing tendency to compensate in fantasy for frustrations in reality. The ego-development was gradual and slow. The younger brother was motivated primarily by a desire to avoid danger and looked upon the world as a task which had to be solved and conquered; his growth consisted of a gradual extension of the "territory of security" in which he could be active. His ego grew rapidly and he internalized readily the norms and behavior patterns of the adult environment. His feeling of security grew with the number and complexity of tasks which he learned to master. The author does not claim that children and adults can be readily divided into these two types. On the contrary, she views these two forms of being-in-becoming as extreme poles between which all humans oscillate. These two brothers happen to differ so much as to exemplify well the extremes of the pleasure-counterphobic dimension. This study reflects the influence of existentialism in the sense that while it emphasizes traits which are rather universal it describes the uniquely personal way in which the brothers manifested the universal. This very well written monograph will be of particular interest to psychologists concerned with child development although the implications have a much wider application.

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Opler, Marvin. *Culture and Mental Health.* New York: McMillan & Co. Pp. 553, \$8.75.

Since the turn of the century, social scientists have provided us with a large number of cross-cultural studies. Most of the studies have attempted to show the similarities and differences between the institutional and

value systems of various cultures. None of these studies has specifically attempted to focus upon and compare the abnormalities of behavior found in different cultures. The present volume endeavors to do so by juxtaposing numerous discrete and independent studies dealing with the psychopathology which is noted in different cultures. Some of these studies were already in print, while others are new. However, such an approach falls short of the author's aim of understanding psychopathology and mental health of different cultures in that nowhere in this book is this diversified material synthesized. Such a synthesis could have enabled the reader to see the complexity and diversity of the problem or may have enabled the emergence of some general principles from this data, possibly applicable to different cultures. In the reviewer's opinion, this appears to be a basic deficiency of such diverse collections of writings at one place.

The author of the present volume is a professor of sociology at Cornell University who has worked on various projects in India. In this volume, he attempts to compare the pathology found in technologically advanced societies with that found in pre-literate societies (Zulus, Red Indian, etc.) and attempts to set such comparison in a world-wide perspective. He attempts to do this by drawing upon the studies done in five different continents.

Perhaps the greatest pitfall in such studies is an ethnocentric approach to the dynamics and pathology of other cultures. Here the danger always remains that one may impose the diagnostic labels and categories which were developed in the Western, Anglo-Saxon, technologically advanced societies upon non-Western societies, thus destroying the reality of other cultures. In this volume such an approach is occasionally found. For example, the reaction of Zulus (London) in the face of industrialization (and, hence, the shift in the male-female role) is labelled as hysteria. One wonders whether at this stage of our knowledge of cross-cultural pathology it may not be better essentially to describe, then relate the pathological manifestation to its antecedent and current cultural conditions rather than label it. It would appear to be rewarding if one could, like the Japanese (Caudill), find new labels which would be more fitting than the existing ones to the indigenous psychopathology.

Yet the book does lend itself to some type of cross-cultural comparison and many principles can be drawn by a diligent study of these cultures by the reader himself. One

such example is the effect upon individuals of migration from an agrarian economy (where the family ties are usually close) to an industrial-urban community. Three such studies are reported in the book. In all the three communities studied - Peru, Algeria and Singapore - it has been found that not only such immigrants encounter considerable stress and tension in adjusting to an urban life, but that each specific culture produces its own variant of maladjustment. For example, the Peruvians develop physical symptoms and try to return to the original home conditions; the Algerians show more anxiety over control of impulses, and Hindu migrants to Singapore show a higher rate of mental breakdown. Such studies, in conjunction with the studies done in the South Sea Islands (Spiro), suggest that the defense mechanisms which develop and can operate successfully within a culture do have their threshold and limits beyond which they fail to provide the necessary binding of anxiety.

That the role of the culture, especially the structure of the family relationship, is one of the most important factors either in checking or enhancing mental illness is brought home soundly. Those communities where cooperation and support are found within the family lend themselves less to mental illness than otherwise. It is further made clear that the type of psychosis which one develops is colored by the culture and the type of family composition. For example, the Japanese schizophrenics are far less withdrawn than Americans; in New York the Irish and Italians develop different kinds of psychotic symptoms. It would, indeed, be asking for too much at this stage of our knowledge to know which specific factors in the culture of family constellation contribute to what extent to psychopathology.

It should be mentioned that the methodological problems of reliability of observations made on alien cultural patterns and the validity of the instruments used to assess and measure certain dependent variables remains unresolved. Yet these studies do add to our knowledge and understanding. Their contribution will be even greater if corresponding results are found either in two different cultures or in the same culture at two successive periods, just as the findings of the present study in Algeria (De Vos and Miner) are found to be similar to the one reported by the Bleulers a quarter of a century ago.

In the United States, Faris, Hollingshead and Redlich and others have attempted to show the ecological factors in mental illness. Their approach has been to obtain an enu-

meration of individuals receiving psychiatric care. The placement of the patient in the class structure of the community is then obtained and the two sets of variables are correlated. A somewhat varied approach to study the stress and strains of a culture and subculture is discussed by H. B. Murphy. The author obtained the list of all mentally ill patients in Singapore, noted which of the ethnic, professional or economic groups lend most and/or least to mental illness, and then studied the forces within this group which may contribute to pathology. The groups which contribute most and least to mental illness are also compared. This chapter is extremely rewarding for the reader. Other stimulating chapters are by Carstairs, Jaco and Sanua.

The chapters on Negroes by Kardiner, on Mental Hospitals in America by Kennard and on Cultural Background of Mental Health by Opler are essentially repetitious and add little to our knowledge.

Although the book contains some chapters written by psychologists, it attempts to delimit the bounds of mental illness by maintaining that the study of mental illness falls within the discipline of psychiatry alone. By such a stand, or by implicitly so defining mental illness, the book leaves out many of the fine works done by psychologists not only in this country but also in other parts of the world.

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GENERAL NEWSLETTER

Sanchez, Garcia, Jose. Importancia del Test de Rorschach en el estudio de la personalidad y de la cultura. *Revista de la Sanidad de Policia*, 1958, 18, 133 - 140.

A general discussion of the value of the Rorschach in the study of cultural differences in personality.

Loosli-Usteri, Marguerite. Une grave maladie subie pendant la premiere annee put-elle compromettre l'evolution de la personalite? *A Crianca Portuguesa*, 1959, 18, 5-22.

The author discusses 13 cases in which serious illnesses during the first year of life created serious obstacles to development.

Klijnhout, Adolph E. Clef Szondi. *A Crianca Portuguesa*, 1959, 18, 29-42.

A new scoring and interpretation method is presented for the Szondi.

Klijnhout, Adolph E. La signification de la fonction primaire. *A Crianca Portuguesa* 1959, 18, 61-96.

The author uses the Rorschach to clarify some notions of personality structure.

Piotrowski, Z. A. Revision del metodo de Rorschach. *Archivos de Criminologia, Nuero-Psiquiatria y Disciplinas Conexas*, 1959, 7, 643-669.

A discussion of recent modifications of the Rorschach technique.

Cotte, S & Roux, G. The house divided. *Etudes de Neuro-psychopathologie infantile*, 1950, 8, 69 - 103.

A clinical study of children's feelings regarding family dissolution and tension by means of the Rorschach, drawings of houses, and the Binet-Simon.

Ray, P. C. The children of the Abor and Gallong. *Education and Psychology*, 1959, 6, 1 - 72.

A psychocultural study of the children of two tribes in India. Rorschach findings are compared with those of other anthropological studies.

Schachter, M. & Cotte, S. Etude psychodiagnostique d'un nouveau groupe de triplets. *Acta geneticae, medicae et gemellologiae*, 1959, 8, 347, 360.

A clinical study of a set of triplets by means of the Rorschach and Buck's H-T-P.

Kamiya, Miyeko. Psychiatric studies on leprosy. *Folia psychiatrica et Neurologia Japonica*, 1959, 13, 143-173.

A comprehensive study of a huge sample of patients suffering from leprosy. Methods included psychiatric examination, bedside interviews, a questionnaire, Shor's Sentence Completion Test, a need inventory, the Rosenzweig Picture-Frustration Test, and the Group Rorschach.

Bornstein, B. & Tamarin, G. Examen psychometrique d'un cas de prosopagnosie. *Revue de Psychologie appliquée*, 1959, 9, 109 - 116.

A case study of aphasia employing the Bender-Gestalt, Rorschach, and visual and intellectual tests.

Sanchez Garcia, Jose. El Rorschach en los Indios Aguarunas. *Revista de Psicologia general y aplicada*, 1959, 14, 287 - 320.

Rorschach protocols and summaries are presented for 15 Peruvian Indians of the same tribe.

Moya, Gonzalo. Estudio de l'inteligencia, personalidad y comportamiento en un grupo de 165 soldados. *Revista de Psicologia general y aplicada*, 1959, 14, 321 - 389.

Rorschach data are presented by intellectual level for a sample of Spanish soldiers.

Rizzo, C. & Argenta, G. Contributo allo studio psicologico della prostituzione fenninile col metodo Rorschach. *Revista di Neurologia*, 1959, 29, 545, 562.

A number of commonalities are found in the Rorschachs of 60 Italian prostitutes.

Schachter, M. & Cotte, S. Psychodiagnostic de Rorschach d'un groupe de jumeaux uni et bivitellins. *Etudes de Neuro-psychopathologie infantile*, 1959, 8, 45-68.

Rorschach findings on several pairs of twins.

Schachter, M. L'acide glutamique en neuro-psychiatrie infantile. *Etudes de Neuro-psychopathologie infantile*, 1959, 8, 17 - 43.

A clinical study of the effects on glutamic acid as shown on the Rorschach.

ANNOUNCEMENT

ANNUAL WORKSHOP IN PROJECTIVE DRAWINGS

The 1960 Annual Workshop in Projective Drawings, to include H-T-P, Draw-A-Person, Draw-A-Family, the Unpleasant Concept Test, Draw-An-Animal, the Eight Card Re-Drawing Test, and doodles, will be conducted at the New York State Psychiatric Institute, New York City, this year by Emanuel F. Hammer, Ph.D. and Selma Landisberg, M.A., on July 25-28, from 10 AM-12 and 1-3 PM daily.

The workshop will provide a grounding in fundamentals, and then go on to advanced considerations of differential diagnosis, psychodynamic appraisal, psychological resources as treatment potentials, and the application of drawings in therapy. The text, *The Clinical Application of Projective Drawings*, Charles Thomas, Publisher, Springfield, Illinois, is suggested as preparation for the workshop.

For information as to admission or requirements, write to: Miss Selma Landisberg, 166 East 35th Street, New York 16, New York.

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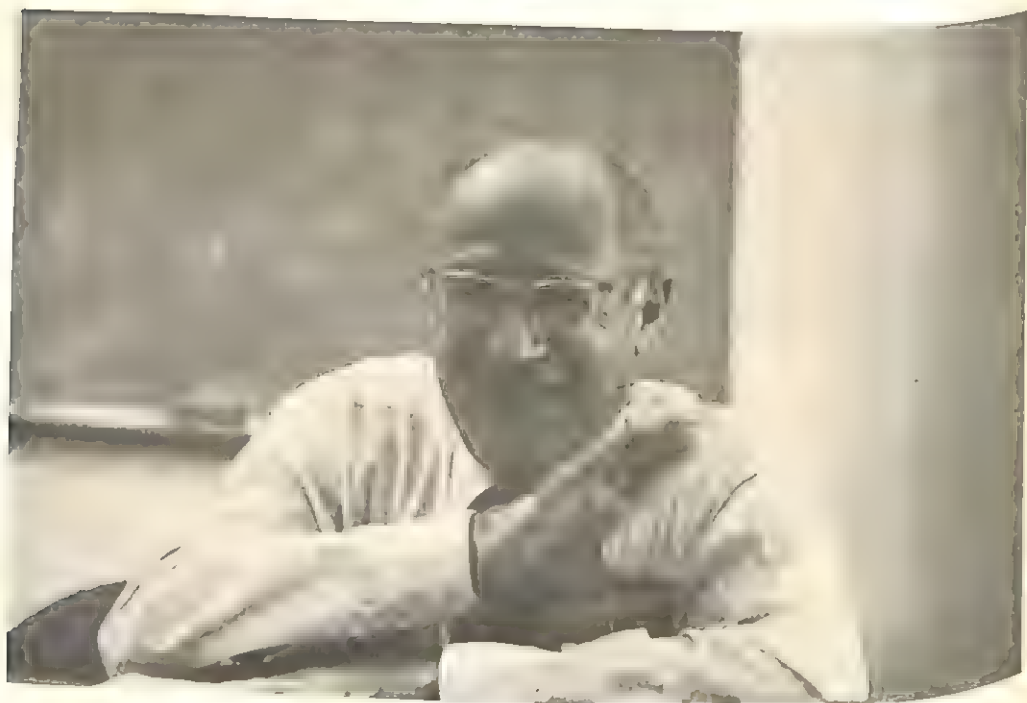
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BRUNO KLOPFER — two moods

EDITORIAL

For twenty-five years Bruno Klopfer has been Editor and prime mover of the Journal of Projective Techniques and its earlier version: the Rorschach Research Exchange. At its inception the Exchange was essentially the sole outlet for communication of Rorschach lore of all kinds. It served as agora for the then small group of clinicians and related scholars who saw the value of the new method for diagnostic, theoretical, research, and applied problems that arose out of a new concept of the human being, a concept quite different from the academic notion of statistical study of part functions. Most of the papers were the creative achievements of Klopfer and his students. Many of these early contributions are no longer quoted in the literature because they have been integrated into the body of clinical psychology, but they did much to create the framework of diagnostic psychology.

In subsequent years the Journal expanded in size and scope. Under Dr. Klopfer's guidance and sensitive to his prognosis of evolutionary trends in the field, the Journal met and engendered new needs among clinical psychologists. It welded a secure place for the Rorschach, but it did more than this. It instigated the development of new approaches to the understanding of personality and methods for their experimental study. Klopfer, always the innovator, established bridges for the growing rapprochement between the clinic and the laboratory. Many persons now active members in the society which he helped to found are integrating the data of clinical psychology with the techniques of experimental psychology. It is now common for Rorschach data to be processed through factor analyses and computers.

At present the Journal publishes papers about a variety of projective

techniques in a plethora of settings on a multiplicity of different practical and theoretical problems in many fields of study. The Journal and the Society for Projective Techniques are no longer alone. They have yielded their role as sole spokesmen and been joined by many others who share the burdens of research, teaching and publication which no one group or journal could conceivably carry. In similar fashion Bruno Klopfer's incessant teaching efforts have been supplemented (but not supplanted) by those of his many able students who have proliferated through several professional generations.

Any attempt to describe his role in fostering the development of projective psychology will be incomplete. Any tribute would be insufficient. We have tried in the present issue of the Journal not to focus on his direct contributions. Rather, it seemed to us a more valid picture of them to publish a number of papers that would never have been written without him, even though they may not have specified their debt to him. This is what happens in a few short professional generations. What was at one time someone's great new idea has become so much a part of our professional heritage that its paternity is lost in the family mores.

The personal accounts of Bruno Klopfer by Evelyn Hooker and Pauline Vorhaus tell us something of Bruno as a person. The history of the Journal tells something of his development. And the technical papers that follow reveal something of the many directions of thought which he helped to create.

BERTRAM R. FORER
Executive Editor

and the ASSOCIATE EXECUTIVE
AND STAFF EDITORS

Bruno Klopfer — A Biographical Sketch

PAULINE G. VORHAUS¹

In writing a biography, one must ask one's self two questions: 1). For what audience is this intended? 2). What is one going into the past to discover?

This history of Bruno Klopfer is written more for those readers, present and future—who do not themselves know the man, than for those of us fortunate enough to call him friend or teacher. *We* do not need a history to "know him." But for those others, the question will arise, as it must always arise concerning great men of every period, what forces or influences in his life and in himself have shaped him into the particular kind of great man he turned out to be?

This brings us to question number two. As I conceive of this history, it is an exploration into the past of Bruno Klopfer, in an effort to determine those influences both internal and external, which shaped him into the person we know him to be. But first, what kind of person is that? What is he like, this man whose history we would search, in order to understand the genesis of it all? What is called for clearly, is a word-picture. But contradictory words come to my mind; words calling forth such opposite images, that it seems almost as though some must cancel others out. There are qualities like his leadership ability; his high intelligence; his intuitive skill; his generosity and outgoingness; his mature reality testing, which fit readily into a "great man" picture. But what about his "Peck's bad boy" qualities; his unwillingness to conform (amusingly symbolized in the sandals he will seize any opportunity to wear, and the sweaters which he so much prefers to a suit jacket)? And what about his way of granting

himself the right to say indiscreet things (knowing full well that they are indiscreet); his subtle and perceptive use of word nuances, combined with a large indifference to the fact that he has retained his Germanized sentence construction and his native accent? Then there is his "small boy" glee at a lucky coincidence, (including the "coincidence" of a blind Rorschach interpretation, which fits the case history in a "hand in glove" way) and his funny puns which so greatly delight him? How can all these be placed in juxtaposition, and welded into a whole?

As I write this I become aware that the task is even more difficult, since different individuals, reacting primarily to certain of these qualities or a grouping of these qualities or others that stand out in their minds, may well see a very different "gestalt," so that the word picture which I paint may seem to them a very bad likeness; maybe almost no likeness at all. At this point I am comforted by recalling James M. Barrie's play, "The Legend of Leonora." The play opens with a group of people together in a drawing room to meet some woman who, they understand, has returned after a long absence. But as their host talks, it seems they were mistaken. It is a whole group of women they are to meet; women so different that it seems unlikely they will get along, even for a single evening. And then the bell rings, and Leonora is ushered in. And behold, she is all these women and somehow the contradictions are not contradictions!

Bruno Klopfer was born in Bavaria, Germany in 1900. This seems a mere factual statement; one which can have no psychoanalytic significance. And yet, he likes to refer to the fact that he was born "at the turn of the cen-

¹ Veterans Administration, New York Regional Office.

tury," as though somehow this is meaningful or significant. In some way it pleases him to have been born in so special a year, as though there were some good auspices connected with his birth. "A star danced in Heaven, and under it I was born." May not this feeling (we who are trained to think this way cannot but ask ourselves) symbolize the sense of the deeply accepting situation into which he was born; one in which the small child of those early 1900 days felt so valued, that capacity for self-value was born, as well as an outgoing, optimistic attitude to life and to others? And indeed, those of us who know his mother have reason to know how great are her accepting and loving qualities.

The father of Bruno Klopfer was a banker! (Bruno himself says this with a voice inflection which implies the exclamation mark placed here.) It is as though he is springing an amazing surprise, one which will leave his hearer as amused as he himself clearly is in retrospect. He can afford to smile today, but much of it was no smiling matter to the boy growing up with this father. Bruno's descriptions make of him a German father of the old school, one who knew what he wanted; how success was to be defined, and how his children should live in order to gain this success. And I am afraid that Mr. Klopfer Senior equated certain conservative Junker standards with fulfillment. At all events, the life of a student was clearly not the life he envisaged for his children, and he must have felt (and, according to Bruno, often expressed) strong negative reactions to these inclinations of his son. It was well for Bruno (and for us all) that he early developed the capacity to stand up against his strong-willed father, so that, in spite of paternal disapproval, he was able to accomplish his goal. Actually, it was well for Bruno's father too. One of Bruno's favorite personal history accounts has to do with the last days of his father, (at the end, a refugee in

Israel). The money to which his life efforts had entitled him could not be taken from Germany. In those last days it was his psychologist son who supported him; a fact to which he made grateful (and probably puzzled) acknowledgement on his death bed.

But we must go back to the boy Bruno, who somehow sensed that ego-identity for him depended on working out a life pattern different from his father's. We can wonder whether the wish for the sweater instead of the jacket, the sandals instead of shoes, are not today's residues of early practice attempts to be different, and a little defiant. But what made him so open to the appeal of the intellectual life? Bruno himself accounts for it very simply. The bad eyesight to which he has had to accommodate all his life is due to a condition which reaches stabilization in adult life and is most pronounced in childhood. This condition was not diagnosed in Bruno's early school years, and so the small boy had to concentrate very hard, to make up through his keen thinking what he could not see with the visual clarity of the other school boys. He therefore developed a great prowess in mental running; outstripping the others in the speed and agility of his thinking. But outstripping never resulted in lonely adventuring. Bruno Klopfer all his life has been too genuinely related for this. Knowledge was always something to bring back to share with others.

Doubtless his second experience with a giving woman intensified this recognition of the wish to give as liberally as he received. For the leisure to work for his Ph.D. dissertation came about after his marriage at the age of 22, when Erna, sharing with him his goals and ambitions, continued her work as a kindergarten teacher. (Note: Bruno received his degree in 1922 from the University of Munich when he was just 22.) That her faith in her young husband is justified is something which we, who are honoring him in

this issue of the Journal, know as a fact. What is less known is the successful career which had already got under way in Germany when Hitler came to power. His work at that time was focused on educational problems; his particular area of interest being the "problem child." In fact, for a period, he was educational and psychological director in a school for problem children. He also gave weekly radio talks on problems of delinquency and preventive mental hygiene.

This interest in children has continued on, as one of his outstanding and most engaging characteristics. To witness Bruno administering a Rorschach to a pre-school child, constitutes a touching experience in adult empathy for a child. Bruno himself thoroughly enjoys this "work." In fact, I have heard him distinguish between the "fun" of this, and the word "work," clearly indicating that there was no resistance to be overcome in doing things with children. Some of his publications on childrens' Rorschachs (1938, 1939b, 1939c, 1941, 1945) bear valued testimony to his concern with, and capacity emphatically to share, the problems and the developmental vicissitudes of childhood. This interest has continued on through the years. He is currently engaged in research on the personality organization of children with ulcerative colitis.

Dr. Klopfer's interest in psychoanalytic procedures started in his graduate student days. He had a brief personal experience with Freudian psychoanalytic exploration in some didactic analytic work with a woman analyst. Later, a refugee from Germany (then living in Switzerland), he worked with Dr. Carl Jung, this time in the personal analytic exploration on which both deep self-understanding and patient-understanding are predicated. This interest too has continued, both in personal and professional affiliations with the Jungian group and in publications in this area. (1955)

Dr. Klopfer also studied Rorschach

testing during his stay in Zurich. It seems strange today to think of him as a Rorschach student and not a Rorschach teacher. I suspect that even then, as together they worked out the fascinating relationship between ink blot reactions and personality dynamics, the student Bruno, unknown to both himself and his teacher, added some of his own rich and creative insights. He himself does not say it that way. But once, when I asked him how he had been able to study so complex a subject as Rorschach testing and scoring in the rather brief time he spent on it, he answered, with the familiar half-joking, half-earnest smile, "Well you see, it wasn't so complex, till I made it complex."

Bruno Klopfer was planning ahead during those Zurich days and one of the aspirations he had was to "bring something to America" (not to come empty-handed). It was this wish which in part led to his elaboration of the Rorschach scoring system, (1941b, 1942) which to the legions who have been his students or derived from him, has done so much to make the Rorschach a meaningful psychological tool. His first text book, *The Rorschach Technique*, (1942b) itself an elaboration and expansion of earlier articles, has since been further elaborated and expanded in the three books which followed (1954, 1956, Klopfer & Davidson—in press). They are all outgrowths of his wish to teach; his need to work through his intuitive ideas, and to put them into meaningful words and into concepts which can be clarified and communicated.

Indeed, Bruno Klopfer's ability to communicate is perhaps the outstanding gift for which we, who have been his students, will always be thankful. He has a way of penetrating into the problem (be it academic or personal) and of answering it with such clarity and precision that, behold, it is no longer a problem! And because he can so well verbalize his concepts, others can use his explanations and themselves teach meaningfully and clearly.

On July 4, 1934, just a little more than a year after Hitler became chancellor, Bruno Klopfer came to America. The speed of his action is a striking example of the sound reality-testing which is one of Dr. Klopfer's outstanding personality qualities. He did not pause for wishful thinking. He saw, understood and made his plans. How extraordinary (a phrase which he himself has so often used in other contexts), that it should have been on July 4th, a day so important to all who value independence and self-determination! Immediately he set about the task of learning to "belong;" a task whose fulfillment was so beautifully verbalized by him at the end of the foreword to his first book that it seems fitting to quote it here: "This book appears at a time of emergency when we are all called upon to make the most effective possible use of our resources, whether these be men or materials. The Rorschach method is proving its worth in helping us to avoid waste of human resources in selection and training of personnel for many important emergency services, both in the Armed Forces and in civilian defense. If this book helps more people to become proficient in this method, I will be grateful for having had an opportunity thus to do my part." (It seems an interesting addition that, in 1951 Dr. Klopfer was asked to contribute a section on the Rorschach Technique in a book on Military Clinical Psychology, issued by the Department of the Army and Air Force). (1951)

Dr. Klopfer's first American "job" was with Dr. Franz Boas, the renowned anthropologist, who knew of his ethnological and social study interest, and who set him to work on a comparative study of psychosis among various population groups in this country. During the three years from 1934-7, Dr. Klopfer continued to work as research associate in anthropology.

It was also important to start learning the nuances of the English lan-

guage, and to exercise his Rorschach skill in this new language. Work with Dr. Ira Wile, the noted child psychiatrist, in his clinic at Mt. Sinai Hospital, provided an opportunity both to test disturbed children, and to experiment with the new language. Possibly the laughter of the children at his mistakes was a help both to the little patients and to the Rorschach expert whose life at that period must have been so full of anxiety. For his wife had perforce emigrated to South America and it was over a year before she was able to join him here.

In April 1935 Dr. Klopfer felt himself ready to start his first Rorschach class. (From smiling reports I have heard from some of these charter students, it seems possible that he did a little wishful thinking concerning his capacity to use English. However, they managed, and the "personal communications" add that it was well worth the guessing efforts necessary on their part.)

We have now come to the historic moment which marks the founding of the Rorschach Institute and the Rorschach Research Exchange. The word "historic" is here used in its two-fold sense. It was an historic (a significant) moment in the history of psychological testing. Also, the names themselves are now a matter of history. They have given place to the names which imply an enlarged concept, —The Society and the Journal for Projective Techniques. But we, who can look back, proudly feel that the change is one of growth and development only. The sincerity of the effort to explore and investigate psychodynamic processes, unconscious motivation and personality unfolding in all its forms, this was present from the moment of birth onward.

For many years Bruno Klopfer worked in the dual capacity of director of the Institute and editor of the Rorschach Research Exchange. I will leave it to others to speak of his administrative and editorial ability. But none knows better than I of his un-

tiring efforts and his enthusiasm; sufficiently self-abnegating that I wonder whether the often misused words "his dedication" may not be appropriately applied. As to his title "Director" (carrying to some suggestions linking it with his country of origin), I would like to refer to Dr. Klopfer's comment when, in 1956 he was elected President of the Society for Projective Techniques. He spoke of the "elevation" which the Society has conferred on him. "For many years I was director of this Society. Now I am honored by being chosen its president."

Bruno Klopfer's work as psycho-therapist is perhaps less widely known, although it cannot come as a real surprise, even to those who have not known this as a fact. His insightful approach and his judgment as to what individuals can or cannot accept at a given moment in their lives, are so much a part of himself that they enter into his casual relationships no less than into his most thoughtful writings. Increasingly through the years, both in his teaching and in private practice, his time has been spent mainly in psycho-therapy and in research ideas which have derived from this approach. (Burton, Farberow & Schneidman). One of these studies concerned with the investigation of personality factors in human cancer seems to merit separate mention, since it became the basis for his Presidential Address. (1957)

The years which have passed have brought personal as well as professional fulfillment to Bruno Klopfer. His son Walter is today associate professor and director of clinical training at the University of Portland. There are three grandchildren, a boy and two girls. As to the garden home in Carmel, it has become both a retreat and a workshop for the Klopfers. It is really a dream come true. Many years ago after one of his western summer workshops, they "confessed" to having bought a piece of land in

California. "Just a fantasy, clearly" his friends comforted themselves, since Bruno was then teaching at the College of the City of New York. The Klopfers smiled, and allowed their friends to tease them a bit. But in 1946 Bruno Klopfer received an appointment as associate clinical professor at U.C.L.A. (a post which he has continued to hold, with a promotion some time ago to the rank of full professor). And so the dream came true! But it should be noted in passing, that they must needs, and *did* take two little pine trees, from Crafts (the Eastern Workshop, then at Carmel, New York) and that these pines, no longer so little, are now flourishing in the garden in Carmel, California. These years have not developed into the "reclining years" which the Klopfers once envisaged. They continued (and we suspect will always continue) to be work years. (The geographic range of Dr. Klopfer's present interests may perhaps be indicated by the fact that he is currently consulting editor for the German and Swiss *Zeitschrift für Diagnostische Psychologie*, The British *Journal of Analytic Psychology*, and the Japanese *Rorschachiana Japonica*.) But these are also growing years for them; years in which flowers can be grown and seeds can be sown towards the future. Also, because they are that kind of people, the Klopfers keep growing, changing, adding to their statures. And, if a little of it is horizontal, most of it is in an upward direction!

We are now back in the year 1960. The many workshops, the talks, both formal and informal, the work directed to an ever-expanding and increasingly useful place for our Society, for our Journal and for projective testing, have added up to something which has become an integral part of our daily professional lives. All that remains is to salute Bruno Klopfer, psychologist, teacher and friend. Long may he continue to help, encourage, share and point the way onwards!

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¹We suspect that several of Dr. Klopfer's published contributions have escaped us. We hope they are few. The Executive Editor is responsible for any oversights.

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The Fable

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The occasion of honoring Bruno Klopfer on his sixtieth birthday would be incomplete without some remarks about one of the most frequently recurring themes of private conversations about him: his extraordinary capacity to interpret Rorschach protocols. The tales told about it have that legendary quality found in fables.

So great is the admiration for this accomplishment, and so little understood is the process by which he does it, that even the most solid and sober skeptics are heard to use the phrases "crystal-ball gazer," or "sheer telepathy." Indeed, some years ago, when Dr. Klopfer had consented to act as a "blind judge" of a large series of Rorschach protocols, an eminent psychologist suggested setting up a research project to analyze "Klopfer analyzing Rorschachs." The psychologist went on to suggest that a well-known government agency might give a research grant for this purpose.

Every colleague or student of Dr. Klopfer's who has had the opportunity to see and hear him at work is strongly compelled to try to answer for himself the question, "How *does* he do it?" I, too, as a student and colleague of his, have been so compelled.

A few years ago, I had the privilege of seeing and hearing him analyze, in succession, 60 Rorschach records as part of a research project on homosexuality. As may be imagined, it was a time-consuming process, which, very fortunately for me, had to occur in the Klopfers' delightful home in Carmel, California. For a week, we worked almost "round the clock," taking time out, on the terrace overlooking Carmel Valley, for the delicious meals prepared by Mrs. Klopfer — often with Dr. Klopfer rushing from his study at the last minute to prepare one of his

own specialties. No one who has been a guest in that household can forget the remarkable combination of food for the palate and nourishment for the mind and spirit, served with a special warmth of friendship and Carmel April sunshine. All who know them agree that Bruno's greatest piece of wizardry was finding and marrying Erna. The Klopfers are connoisseurs of the "good life."

There is no better way of describing what this means, psychologically, than to use Dr. Klopfer's own words in speaking of self-realization: "At the adult level, self-realization expresses itself in the ability to form and sustain personalized, differentiated, and reciprocal emotional ties, the ability to put oneself into one's work (Freud's 'Leistung'), and finally in the ability to utilize the archaic forces of the unconscious for creative purposes. . . . Only a person with an optimal degree of interaction between *all spheres of living* [*italics mine*], and intercommunication between all parts of the personality organization, can develop the seed-crystals for the formation of a structural and functional intimacy of the ego and the Self" (1954, pp. 574-5). These words do not come from a fantasied ideal, but from the texture of his own life experience. The truth of the fables about his uncanny wizardry with the Rorschach has, I think, the same source: the struggle to understand the inner world — his own and others' — in both its idiosyncratic and universal dimensions, but always to relate it to the outer world. The one informs the other, in a process with reciprocal feedback.

Dr. Marvin Spiegelman (in a personal conversation) described this remarkable talent and its source so well

that I asked him to put it in writing: "Bruno is a real phenomenologist. His gift, as I see it, is a fantastic ability to keep one foot firmly anchored in the inner world and the other foot in the outer world, with a free interplay between them, allowing for mutual enrichment and correction. There are people who know more about the unconscious and others who know more about external reality (though not many), but I don't know anyone who can combine this knowledge the way he can. He can thus work carefully with Rorschach responses, relate them specifically and meaningfully to case history data, and come up with a pithy statement which neatly encompasses the situation. That he can do this with a good critical function and still show verve, imagination, kindness and humor is a delight to all who see him in action. His humaneness and empathy, I think, result from his keeping close access to himself and the world."

I agree completely with every word of this extraordinarily well-put statement and would like to illustrate Dr. Klopfer's phenomenological approach, with its pithiness, imagination, and humor, with examples chosen from my tape recordings of the 60-record analysis. All of his wisdom and wit are heard in rich detail in these unique, spoken documents. They ought properly to be placed in a national treasury of psychological records. Following a protocol through his eyes is like focussing an electron microscope on a field in which one had hitherto seen only the dimmest outlines and blurred shadows. Under his guidance, clear patterns emerge, marked with the individuality of the person whose personality one is studying. Here is no clinical stereotype, but a person — thinking, feeling, and behaving in a world of recognizable reality. This is not to say that he does not make errors, especially when he is asked to operate without the clues from life history data which would allow him to modify the fragile and

idiosyncratic clues from the Rorschach. The more unambiguous the description of the personality and the less stereotyped, in the current jargon of the clinician, the greater is the probability of its being either true or not, as distinguished from its being generally true only because, at some level, it is true of everybody. In selecting illustrations, I have tried to avoid the spectacular — tempting as it was. Instead, I have chosen examples which will delineate his characteristic ways of working.

The first example is selected to show the way in which he is able to understand the private world of the person whose responses he is studying because he enters into it and it enters into him. At times it is difficult to ascertain whose associations are being expressed, unless one is following the protocol visually! It is *as if* he tried to think the way the subject does, to anticipate what the next response will be. This is shown, I think, in his interpretation of the following responses to Card II:

Looks like a wound of some sort, or a crab. Nosebleed I associate with the wound. Has a sort of uterine look about it. I see two little dogs facing each other, with something between them—a bone of some sort or a— They change into bears now. There's a certain butterfly appearance to the lower red portion. Red socks. A clamping device. A burst of some sort. I get a general sense of ugliness in the sense of blood. Also a female sexual appearance of some sort.

He read through the responses as far as the red socks, together with the inquiry (omitted here), commenting briefly as he went, and then paused, saying, "He really embraces the color, and wallows in it. It still is balanced in favor of FC, but the way he uses the color on the wound, and the delicate shading of color, and then the red socks. That really sounds to me like a genuine masochistic character. In this case it would be cultural masochism, not primary masochism. He is very differentiated and subtle. The way he really bathes in the red gives

me the feeling that there is some very refined form of masochism involved. *Each time I say something, the next response in the record illustrates it!* He sees the red socks, and then a clamping device; then a burst of some sort; then comes back to the nose-bleed and a female sexual appearance. *He never gives me a chance to stay with my own associations!* He steals my thoughts."

I have chosen the second example from a different subject to show how he relates the inner to the outer (as Dr. Spiegelman has described it) and how, with humor and imagination, he is able to describe the person in phrases so vivid that he comes alive. Because of space limitations, I shall excerpt sections of the protocol (without the inquiry), together with the running commentary. On Card I the responses were:

Well, the first things I see are bats. Do you want the overall, or the component parts? Looks like an Aztec bronze, dug up somewhere, and all encrusted with stuff. Possibly a couple of lobster claws at the top. Let's see if I see anything else. Might be some kind of marine animal—some kind of ray.

The commentary by Dr. Klopfer: "I am impressed with the circumspect way in which he formulates his concepts, asking immediately whether you want the overall or the component parts. From the quantitative picture (the profile, at which he had looked earlier), you can see that this is only an attempt to get a legitimate excuse to follow his own inclinations to stick to the overall. He is very concerned (in the Inquiry) as to whether it's one bat or several bats, but settles for the usual concept. Immediately, he specifies the shading, calling it 'mottled texture' (Inquiry). I would say that this is a fellow who makes it his business to be extremely conscious and aware of what's going on in his mind. The only deviation from the W response is the lobster claws, which shows that one of the reasons for his

circumspect behavior is concern about aggression."

On Card II the responses were:

This is the right way up, or doesn't it matter? I don't know why marine, but it seems like more lobsters, the feelers. I suppose that's the color that does that. It could be, also—looking at the space—it could be the drawing of a machine: the cross-section of a cylinder, with gases coming on up through and exploding out—the white space. Looks very rockety this way, too. These other appendages up here (red)—I don't get anything.

The commentary: "Has he had any contact with the Rorschach?" (No.) "Then he is extremely sensitive to the implications of this procedure. He does the same thing with the color on this card. I would say that this kind of intellectual introspection must be the major preoccupation of his life. I have the idea of a writer. See how he describes Card III! He is a brilliant phenomenologist, no matter what he does with it. And, with all that, he has ever so slightly a sense of humor: 'Looks very rockety this way.' I can almost hear him chuckle! And I can hear Dr. Klopfer chuckle as he says it.

On Card III the responses were:

Well, seems like two figures which could be caricatures of people, persons done with a bird slant. Seems to be two little sea horses. Let's see what the bird-persons are holding in their hands, reaching downward. They seem to be reaching down towards something, or lifting something, as if a basket. Quite a formal composition. Both are very symmetrical. The central one—I don't make anything of that. Well, I would say they have high heels, or claws of a bird, if it was a bird.

The commentary: "How very clever! 'Persons with a bird slant.' I have the feeling that he has developed the most superb and smooth mastery of his intellectual processes of all the people we have thus far seen. It lacks, in a way, the kind of brilliance which comes out of chaotic creativity. He is too well organized for that. Otherwise, it is real perfectionism. It's amazing

how anybody can be as logical in his Rorschach performance. He talks and acts as if he deals with a mathematical formula. There is no facet of the material which he does not immediately respond to."

The responses on Card VI were:

It wouldn't do to call everything a bearskin rug just because it's stretched out like that. I have seen some kind of Indian motif in the top part, in here: a New Mexico Indian decoration, probably representing feathers such as they use in their paintings. Turning it sideways, we have quite a good object floating on the water, a boat with a sail or superstructure reflected, and these could be water plants on the shore. Yes, that's quite good. This way (V), I don't seem to do too much. Now wait a minute! This could be an icicle face: a long nose, where the water dripped, and the chin—like something that collects on a rain spout. The whole motif could be one of those medieval halberds on an elaborate design. A pole. This would have two heads. A pole at the bottom, and the top showing two heads, the chopping part. That offered quite a bit of variation. I don't know what the light spots are.

The commentary: "Oh, this is priceless! 'It wouldn't do to call everything a bearskin rug just because it's stretched out like that.' He is a dear! I have the side-thought that he must be a good friend of Dr. X /a mutual friend/. He comes as close to the acting-out proportion, because his shading is distributed between Fc and FK. If it were all on the Fc side, there would be no problem. The humor comes out in the icicle face again. An interesting point is that in spite of the intellectualization there is no feeling of a compulsive setup, because what he does with his impulses is that he doesn't repress them and he doesn't isolate them, but filters them before he permits himself to be spontaneous. They have to go through this very careful intellectual filter before he permits himself to be spontaneous. It's like the advertisement for the new filter cigarettes, 'The flavor comes through'."

In the final summary Dr. Klopfer

calls this man a "razor-edge perfectionist." "Now we see the razor-edge adjustment. On one side is the isolation of aggression; but the more important thing, as far as the razor-edge adjustment is concerned, is that he is essentially very sensitive and responsive. He would get from one problem to another if he would permit himself to give in to his submissive seductions which he is constantly surrounded with, and that's why he walks on a razor's edge — to keep everything under control."

It is unfortunate that the record is too lengthy, and Dr. Klopfer's comments too extensive, to cite here in their entirety. That the interpretation seemed to me to describe the man and his psychodynamic picture so clearly and succinctly, congruent with all of the other test and interview data, is not the reason for selecting it. Rather, I wanted to show something of the process and flavor of Dr. Klopfer's own filtering process.

The rich variation in the records at which he was looking was a never-ending source of delight and amazement to Dr. Klopfer. His obvious enjoyment of the material helped to create the kind of atmosphere in which the excitement of intellectual discovery becomes esthetic pleasure. There were no evidences of careless or superficial "jumping to conclusions," although the more banal records, similar to hundreds which he had seen, were quickly and competently dealt with. On the richly original records, he lavished the "loving devotion" (a phrase used by him to describe the care with which some percepts were elaborated) of his total wealth of clinical wisdom. It was always an exciting moment when he encountered a really original response. One can safely say that when he calls a response "original," it is! Once or twice in 10,000 records! Some of these responses came to characterize the records for him, as though the whole personality could be symbolized in a striking, idiosyncratic response.

Let me try to describe some of these, and the sometimes startled, sometimes puzzled, exclamations they evoked. I wish that the tone of his voice, as he discovered them, could be reproduced. There were two records in the entire series in which a bee was seen in the top red on Card II instead of a butterfly. The first one occurred in a protocol which contained many carefully seen and richly elaborated esthetic objects. Dr. Klopfer had said, on looking at the quantitative picture, "He looks like a nice man." On Card I, he commented, "Oh, what a sensitive guy. . . You know now he is nice . . . just the right emphasis on aggression, with the 'little' claws up in front." And then he came to Card II. "'A bee in flight.' Now that I would never have guessed. Why is it a *bee*? I have never seen that before. You know why I think he calls it a bee? It's a deflection from the red color. The red color stings. That's why it's not a butterfly, but a bee." He continues through the card, and at the end of it says again, "Why does he call a butterfly a bee?" He does not return to it again, but he is obviously occupied with it. The next day we came to the second record having the bee on Card II. He commented, "Another bee on top! I have never seen that before, and this is the second one in a row." He then read through the card and, at the end, said, "A bee! Did I consider the one yesterday specific for homosexuality? I am sure it has to do with the transposition of meaning of the red into the content." Later, when he had completed the task of selecting the homosexual record from matched pairs of protocols, he wanted to go back over the incorrect choices and the ones in which he had felt forced to make a choice without any certainty. As I was picking them out, he said, "if I remember correctly, the two red bees we had were, in the course of forced choices, both pushed into the heterosexual column. I constantly thought the red bees had much more meaning than I thought, originally."

And he was right. They did! Both were homosexual records. Although there is much about these men, other than the Rorschach record, which is distinctive, I have never been able to think of them since except as the "bee" men.

One of the "bee" men saw a "birthday cake sitting on a plate" on Card VI, followed by a "bedpost." There had been good evidence in the preceding responses that "dependent needs had been sublimated in the form of tenderness, but that there was a real struggle going on to sublimate aggression, too." When Dr. Klopfer came to the birthday cake, he said, "Here I am strongly tempted to make a genetic inference. It may be that he actually had to accept, very early in life, the responsibility of the adult. The mother must have had softness and warmth, with strong but gradual demands. This got him started on this sublimation path. Perhaps there was a strong father with whom he could readily identify but he was not at hand." No more accurate picture could have been given. And what was even more striking was that the birthday cake was an idiosyncratic symbol in this man's life for this whole situation. The father, to whom the boy had been very close, had died when he was seven. The mother, with three sons—this man the youngest, had been forced to go to work to support them. She was a warm, affectionate mother to her boys, but she also insisted on their having responsibilities — even at 7. Just before the "bee" man's 8th birthday, he went out hunting walnuts with a friend on a Saturday afternoon and did not return in time to get his Saturday chores done. When he walked in with the bag of walnuts clutched in his hand and handed them to his mother (she had a special fondness for them and that was one reason he had gone), she thanked him but did not reprimand him. The following Saturday he was to have his first birthday party with a "store bought" cake. When he was ready to go for the cake,

the mother said, "Here is the money. You will go to the store and pay for the cake, but of course you cannot bring it home, because you neglected your responsibilities last Saturday." On her deathbed, she asked whether he had forgiven her for the birthday cake.

I do not know whether I have succeeded in conveying to the reader who has not had the privilege of seeing Dr. Klopfer at work his extraordinary capacity to take the symbol in its special setting in the Rorschach and relate it to the texture of a man's life. Nor do I know whether I have succeeded in describing his talent, for those who know it very well. As with any creative artist, one can only hint at the sources of the talent—and Dr. Klopfer is an artist.

Yet, perhaps we can say one thing more about the man and his talent, for, in this case, they are inseparable. The least important thing about him is that he is a psychologist. He stubbornly insists on being a person! The sensitivity and responsiveness to microscopic clues, as well as global ones, which one sees him using in the Rorschach, also characterize his relationships with friends, students, and colleagues. His empathy and awareness of need in others, his great generosity with his energy, insight, and affection, and his catholicity of interest in all matters pertaining to the human condition have endeared him to a multitude of friends all over the world. Few people are willing, and able, to carry the concerns of and for others as he is; not in some abstract way, but with such a plenitude of specific detail that we can say of him, "He is his brother's keeper" — in the Rorschach, in his work as therapist, in his teaching, and with his friends.

We began these remarks with the fable about his Rorschach wizardry. But there is a deeper sense in which the term "Fable" applies to him. In an autobiography, published, origin-

ally, as *The Story and the Fable*, Edwin Muir, a poet and critic, writes (1954, p. 49): "In themselves our conscious lives may not be particularly interesting. But what we are not and can never be, our fable, seems to me inconceivably interesting. I should like to write that fable, but I cannot even live it; and all I could do if I related the outward course of my life would be to show how I have deviated from it; though even that is impossible, since I do not know the fable or anybody who does know it." Later, however, he writes: "There are times in every man's life when he seems to become for a little while a part of the fable, and to be recapitulating some legendary drama which, as it has recurred a countless number of times in time, is ageless (p. 114)."

As I understand Muir, the fable is the universal human drama, the struggle through conflict toward self-realization. While it has particularity in each individual, and thus becomes an inner drama, it is essentially the struggle of mankind toward redemption, and thus becomes universal. The "times in every man's life when he seems to become for a little while a part of the fable" are those moments when the particular becomes the universal, the Island is a part of the Main, and the self becomes The Self. Dr. Klopfer knows more about *this* fable than do most of us, because, I suspect (although I do not know), the times when he becomes a part of the fable occur more frequently than for most of us. And in a way we do not understand, we, too, are more able, at moments, to live the fable because of him.

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Toward A Projective Psychology

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In their *Developments in Rorschach Technique*, Klopfer and his associates (1954) emphasize the paucity of theoretical foundations for Rorschachs and for projective methods generally. They review some of the contributions to theory and offer an elaboration of ego psychology. These statements may be interpreted as indicators of the growing need for a comprehensive projective psychology.

Some years ago, Murray in his *Explorations* (1938) and Abt and Bellak in *Projective Psychology* (1950) indicated the need for and the possibility of a projective psychology. But the major energies in this field have gone into developing, validating and refining the techniques and interpretations of specific projective methods. Thus, a projective psychology is still to be formulated. For such a projective psychology there are some promising leads and recently developed resources which are briefly discussed in this paper in the hope they may stimulate someone to essay a projective psychology.

First we may note that Dewey and Bentley (1949) have urged rejection of the ancient assumption of knowledge as a third substance, existing somewhat in space, as a substance that can be acquired, stored and imparted. They proposed the concept of "knowing" as a transactional cognitive relation which the knower establishes with the known or to be known. "Knowing" occurs as a person perceives, and imputes to what he perceives, the meaning which he himself projects upon whatever he perceives, then responds in some manner to that self-imposed or projected meaning. Here we find an assertion of cognitive projection as the basic process of "knowing" whereby the individual learns to live in a symbolic cultural world of meanings and goal values.

Indeed, we may say that cognitive relations, as such, are uniquely symbols, names, statements, propositions, etc., since we can "know" only what has been symbolized. Without a symbol we can relate ourselves more or less naively by reflex, overt action or esthetic response, or emotional reactions, responses which, however, may become established as responses to symbols when certain symbols become invested with meanings that evoke such naive responses. Because symbols are so plastic and ambiguous, they permit endless variations in their use for communication with others and with the self.

Secondly, the cumulative findings on the functioning of the reticular functions of the brain, as investigated by Magoon and others (Samuels, 1949) indicate that all sensory input is subject to alteration and patterning from at least two sources: (1) the cognitive patterning imposed by the cortex according to prior learning, and (2) the impulses and affective messages arising from the individual's organic functioning. Both of these are mediated by the reticular function and may operate to distort and grossly contaminate perception of all modalities.

Third, experimental study of sensory deprivation has shown that a person who is subject to isolation from incoming messages, so that his input is minimal, is often subject to hallucinations and other disturbances, sensory and perceptual, and psychological and affective. Seemingly the deprivation of external input deprives the person of the cues by which he continually orients himself to the public world and leaves him exposed to the uncontrolled, somatic impulses that are normally checked by the external input and the cognitive processes of "knowing." (Dewey & Bentley, 1949)

Some individuals who have been deprived of sensory inputs may fail to learn to orient themselves adequately to the consensual world, as the writer has suggested with respect to deprivation of tactual communication in infancy (Frank, 1956). Likewise, some individuals seem to have learned to impose cognitive patterning on all inputs so that their somatic functions and impulses cannot, or do not, find expression overtly and directly in what they perceive and what they say or do. Obviously there may be various degrees and combinations of these conditions that find expression in individual personalities.

Fourth, the concept of Cybernetics (Wiener, 1948) with the recognition of how positive and negative feedbacks provide self-guidance, self-correcting regulation and a kind of self-initiating or purposive striving in a system or organism, (Rosenblueth, *et al*, 1943) offers a conceptual model in which the projective process may be viewed as operating. In machines this self-regulation is provided by what is called programming, which means that the machine is initially instructed how to handle the input of materials to be computed and this programming provides the feedbacks for its operation. In organisms, especially the human personality, the feedbacks may be seen as operating in the learned patterns of perception and of habitual activity which, once established in childhood, operate to focus the individual's awareness and perception and to direct his overt activities of all kinds, as well as his organic functioning, his cognitive "knowing" relations and his symbol use, recognition and responses. But perhaps the most important feedbacks appear in the inner speech of the individual, his continual talking to himself, in which he may rehearse and plan his activities, criticize, scolds, condemns, rationalizes or excuses, praises and reassures himself, thereby providing the cognitive feedbacks that direct his activities purpos-

ively toward whatever goals he has accepted for his life career. Thus the feedback process in inner speech may be viewed as governing his scanning of the world and his selective awareness and patterned perception, acting as censor or filter for whatever inputs the person receives. With his inner speech there may be more or less imagining, fantasizing and day dreaming, out of which may emerge creative ideas and new leads to overt activity. Central to this inner speech and fantasizing is the image of the self—the symbols for I, me, mine, similar to other persons' symbols, as for parents, siblings and others by which the individual relates himself cognitively to others and also to himself.

Apparently the familiar assumption of a passive organism waiting to be activated by a stimulus or an impulse is no longer valid since the organism, especially man, is actively functioning all the time and when awake is engaged in scanning the world for the inputs or messages which it requires as occasions for purposive striving and relating cognitively, esthetically and affectively. (von Foester) Indeed, the function of the stimulus-situation is largely that of a message which triggers an activity and usually evokes some overt expression of what is actively operating in the individual, waiting to be expressed or projected as one step in the continuous striving for whatever purposes or goals he seeks. As John Stroude once described it, each person may be seen as having a private radar by which he sends out impulses into the world and when they return and are patterned on his personal radar screen, he believes and feels that these are the world. This may be interpreted as indicating that each personality lives in his own private world, or his "life space," as Kurt Lewin phrased it, or his "idioverse," as Saul Rosenzweig has more recently said. Such a conception of the individualized world, space or cosmos, becomes clear and credible when we accept the project process as central

to the personality, and employ the concept of feedbacks.

The individual personality may be viewed as building up and endlessly striving to maintain and defend an idiosyncratic "as if" world, to use Vaihinger's phrase, or his "virtual world," a term by which Suzanne Langer (1953) describes a work of art that is not a representation but a creative product of artistic imagination. The personality process we seek to understand is how these "as if", "virtual" worlds arise in the life history of the individual and how, once established and guarded, become occult to the outsider, and usually to the person himself. We gain insight into that private occult virtual world by projective methods, especially when the individual "cannot or won't say," as Murray remarked, what is most important for understanding his private world. But we should recognize that everything a person says, does or refrains from doing, is a projective message, so that we may utilize a wide variety of observations to reenforce or to substitute for projective tests. In so far as a person uses the symbols of his culture idiomatically, he reveals how he individually has learned to use them, to interpret and manipulate them as idiosyncratic patterns of communication with the world and with the self to maintain his private world. In these "as if" or "virtual" worlds the image of the self operates like the other symbols of which these private worlds are composed and manipulated by the individual personality.

Fifth, closely related to Cybernetics is Information Theory and, more especially, Communication Theory that applies more directly to human communicating. (Ruesch & Bateson, 1951) Central to these theories or conceptual models is the assumption that anyone who wishes to communicate has a message to transmit which he must code into some orderly pattern or configural arrangement (as contrasted with random "noise"), must transmit that coded message to

others, who in turn must be alert to the incoming message, decode it and interpret it according to its meaning for the recipient as his life experiences, his affective condition and his expectations may operate to govern his reception, his decoding and interpretation of that message.

In the Communication model we see how "knowing" as a transactional process of imputing meaning, the operation of the reticular formation, the current and, especially the previous, sensory deprivations experienced by the individual, the operation of feedbacks from outside and from inside, especially the symbolic feedback of inner speech, are all involved and interrelated as different dimensions of the projective process and of human purposive striving without which communication, except for biological and physiological signals, could not occur.

In terms of a communication model, we may regard each person as a sender of messages and also as a target for messages. Thus the projective material we observe may be viewed as messages he sends which are patterned and focussed according to his idiosyncratic orientation to the world, his individualized way of communicating with the world, and of selectively evoking messages from the world, especially from other persons. An inventory of the number and variety of messages being received and sent by an individual should provide a comprehensive approach to that individual personality in all his varied intercourse, and also a full array of his projective products.

When we speak of a person's relations to and with another person, also with physical situations and events, or with the world generally, we may give that term "relation" a more precise significance by recognizing that he can relate only by some form of communication. He evokes messages from the world by his idiosyncratic process of scanning and perception, and he sends messages that are idiomatic; in both receiving and sending he em-

plays the projective process which is the only way an individual organism-personality can relate, as contrasted with the kind of relating and communicating to be observed in physical and chemical events that reveal a high degree of order, regularity and largely quantitative relations, but little of the idiosyncratic, identifiable characteristics of organisms, and especially of personalities.

But a communication model and these several processes and operations just mentioned can be understood only in the context of a culture which is a sixth lead. Culture and the personality are not two separate entities or variables that call for sampling studies to be revealed statistically. They are not variables or independent or contrasted processes or operations. Rather, they are two aspects or dimensions of a single process depending upon our orientation and focus. Thus, when we ignore the component individuals in a group and observe only the recurrent patterns exhibited in that group, the regularities of action, speech, belief and relating displayed in the group, we are concerned with *culture*; when, by contrast, we focus our observations upon an identified individual person in the group, noting how he employs these group sanctioned patterns for communicating and relating to the world and to others, but always with feelings, warping and distorting and otherwise bending them to his own individualized life experience and purposive striving, we are concerned with *personality*.

In culture-personality we find a circular, reciprocal transactional relationship in that what we call traditional culture guides and directs individuals in what and how they induct the child into their symbolic cultural world and attempt to inculcate the group patterns which the child is expected to accept and utilize for his participation in the group life. (Frank 1951) Each child, according to his inherited capacities and limitations, his

experience and relations with adults while being enculturated, will develop his own idiosyncratic version of the prescribed cultural patterns and will display his individualized ways of meeting the requirements or expectations of the group. Thus we find in the individual's activities an idiomatic version of his culture, the group way of "coding reality" and relating to the world, as Dorothy Lee (1959) has shown in her study of different cultures. Also we see in each culture individual personalities who may be distinguished one from another but who may operate with a high degree of similarity in many of their patterns, thus conforming to a modal character structure. The similarity of activity within a single culture becomes clearly apparent when we observe the activities of another cultural group with its patterns and symbols.

Niels Bohr has proposed the "principle of complementarity" which permits acceptance of two seemingly conflicting or contradictory statements about the same physical events, each statement being valid according to the platform of observation and the focus of the observer. Similarly, we may accept the cultural approach and findings and the personality approach and findings as complementary observations of the same process, studied either statistically from observations of anonymous persons, or studied in the idiosyncratic expression of an identified individual personality.

This conception of culture-personality offers a significant support and confirmation for the projective process since human personalities develop as individualized ways of living in a symbolic cultural world and in a group sanctioned social order, both of which may be viewed as communication systems or networks which arise from the use of symbols, especially language and non-verbal and graphic symbols. (Frank, 1959) Because symbols are human creations, space-time configurations into which members of a cultural group have learned to im-

pute or project meanings and affective significance, each individual will project his own meaning into those group sanctioned and commonly used symbols and will use such symbols in his own idiomatic way. (Frank, 1948) This process of individualized acceptance and use of symbols is clearly demonstrated in language when each one employs the prescribed words and phrases, relies upon the established grammar and syntax to a greater or less extent for coding and decoding his communications with others. Psychotics cannot communicate adequately and neurotics decode some communications erroneously. Indeed the individualized styles of speaking, of writing, including handwriting, provide unequivocal examples of the group sanctioned symbols and patterns, and also of their idiomatic use and interpretation, a process which seems to be clearly projective, offering possibilities for understanding the individual personality that are now being increasingly refined, elaborated and validated.

Some confusion often arises in discussing symbols, between the group sanctioned public symbols that are commonly used, although always idiomatically, and the private fantasizing and imagery of individuals who may project their own idiosyncratic meanings and feelings into these personal, individually selected and interpreted symbols. Failure to utilize or inability to accept the public symbols may be characteristic of personalities who are pathological or are highly original and creators of new symbols which later may be accepted and sanctioned by the group. But this confusion of public and private symbols may be productive of considerable errors in interpretation of an individual's projective materials and our communications about symbols since some may be treated as public symbols but are probably private symbols, or they treat private symbols as public because the individual personality has been unskillful or inept in using or commun-

icating his private symbols clearly.

Some of the obstacles or difficulties in utilizing projective methods and projective materials may arise from continued reliance upon assumptions which, in the light of the previously described developments, have become questionable and often misleading. (Frank, 1959) These anachronisms are exhibited in many contemporary psychological studies which utilize orthodox concepts and methodological procedures that obscure or divert attention from the underlying assumptions. In so far as projective psychology accepts, or is guided by, these studies, both research and clinical application may be misleading and by so much fail to achieve the full possibilities of projective methods. Especially important are the intra-individual variabilities of individuals. (Fiske, 1959)

Projective psychology has, so to speak, been largely oriented by psychoanalytic concepts as models, such as the hydraulic model of tension release. But as analytic thinking changes, projective testing and especially interpretation of projective materials may be embarrassed by the loss or radical alteration of some of its classical assumptions and familiar interpretations. Thus, as Miale emphasizes, the assumption that projective material is an expression of the psychoanalytic "mechanism" of projection is increasingly questionable and also obstructive to a realization of the full potentialities of projective materials for understanding of the subject's life situation, his usual mode of relating to the world.

Miale also questions the assumption that projective materials are primarily expression of "the unconscious," or of unconscious processes, since that also limits the fruitfulness of projective materials by ignoring or rejecting the experientially learned, the cognitive, symbolic patterning by which the individual relates to the world in all his life situations. Obviously a person is often unaware of

what he is projecting, but this is not necessarily "unconscious." This does not deny that unconscious materials may be and, to some extent, will be, communicated in projective materials, as in life patterns, but questions the assumption or assertion that all projective material comes from "the unconscious."

In all discussions of and approaches to personality, we encounter the assumption that there is some kind of Reality which the individual personality often fails, or is unable, to face, recognize or accept. This term "reality" is a very slippery and highly ambiguous word which may imply a wide range of assumptions, including animistic or dualistic concepts, and a variety of theological and metaphysical beliefs. We may operationally define Reality with respect to personality by recognizing that the Reality which the patients are expected to face is essentially the symbolic cultural world, the consensual public world, of group accepted meanings and significance, of technics and of events that cannot be denied, avoided or escaped, like death. The concept polarized to this Reality seems to be the individual's own private fantasy, imagery, feelings and desires that either conflict with the public consensual world or ignore its exigent requirements and gives rise to immediate pleasure or satisfaction of impulses. If we accept the basic assumption that the symbolic cultural world is a projective product of all members of the group, as that which each member of a group is expected to perceive, to accept and to interpret according to the approved symbols of his culture, then we may be able to clarify the ambiguity of the term Reality while avoiding the epistemological, metaphysical and theological issues which that term usually implies and often raises. The question then is how closely and accurately does a person's projective materials fit into these cultural patterns, especially the symbolic interpretations and patterned conduct required for living in

a social order, and how far does he exceed the permitted range of deviation and distortion which every culture allows, at least to some extent? In a period like today when traditional cultural patterns are being relinquished, rejected and replaced, the question of what deviations are psychopathological becomes increasingly difficult to answer.

May we say, therefore, that the projective process operates along a wide spectrum of relatings and communications, cognitive, esthetic, affective, motor or instrumental, each serving as one of the many ways or means by which each person establishes and carries on his idiosyncratic relations or communications with the world, transforming the external world into that which is responsive to his personality needs, strivings and affective and emotional orientation. Thus, culture transforms the geographical world of nature into a symbolic world for human living by personalities who learn to live in that symbolic world and the social order which they maintain by their individual participation and communications. (Frank, 1951) Each culture has its own *eidōs* and *ethos*, just as each personality has his own cognitive and his affective patterns.

As Alex Carrel remarked years ago, a method or technique is an instrument for finding that which is sought, which may be interpreted as meaning that the purpose as indicated by an individual's concepts and assumptions, his theoretical predilection or bias, will govern how he will use that method or technique and what he will produce by its application in an investigation. This seems to be applicable to projective testing where the concern for clinical diagnosis seems to have warped the interpretation of projective materials into a search for psychopathology. (Miale) This is not said to criticize or deprecate clinical work with projective materials, especially since clinical work has produced most of the contributions to projective methods. But it seems as if this pre-

occupation with making diagnoses has led to an "over determination" in clinical work, toward pathological findings. In the study of non-patients by projective methods, this has provoked a growing criticism and even rejection of projective methods, which are needed in many other fields than clinical diagnoses, namely, in personnel selection, in studies of child growth and development, in counseling and guidance in schools, and in anthropological studies. Apparently the rapid alteration in our culture, the relinquishment, rejection and replacement of formerly prescribed patterns and symbol interpretation by a growing number of persons has not been adequately recognized by clinicians who see pathology in what may be the emergence of a multi-modal culture or expression of another cultural orientation by individuals. It is as if the projective methods had become so oriented to clinical diagnoses and discovery of pathology that their usefulness elsewhere was being compromised by this professionally biased "projection." We may be justified in these comments when those using projective methods seem to lose sight of the person because of their preoccupation with pathology and by such bias may neglect to note or to call attention to the individual personality process and especially its potentialities.

Likewise, projective material is likely to be interpreted primarily, if not exclusively, in terms of psychoanalytic concepts and models, of the "mechanisms" and the functions (often reified into entities called, id, ego and super-ego) which have served as heuristic devices. As Rado (1958) has remarked, "After more than three decades, the theory of superego, ego and id has provided a popular success . . . and a scientific failure." Accordingly, we may suggest that reliance upon Ego Psychology, as in the *Developments in the Rorschach Technique*, (Klopfer, et al, 1954) Chapter 16, may give a temporary sense of stability and of theoretical adequacy which, however,

may become an obstacle to a comprehensive projective psychology.

Obviously the cognitive process is operating in the projective process, but the conception of a cognitive process, as Dewey and Bentley (1949) suggest, as it appears in a conception of a symbolic cultural world, as it operates in communication theory and Cybernetics, may make the psychoanalytic conception of the ego increasingly inadequate, if not misleading. Already the earlier assumption of the ego as primarily, if not exclusively defensive, has been modified to recognize some of the creative potentialities of the personality and the more strictly cognitive or "knowing" process for relating to the world of public symbols. Indeed, these alterations may be seen as recognition of Freud's earlier statement, "Where Id is—there shall be Ego," which may be construed as saying that for all organic functions and impulses recognized by a culture, there shall be some symbolic equivalent that the personality can recognize and deal with cognitively as well as defensively or purposefully. Each culture, however, has a different awareness of organic functioning and impulses, and hence its own symbol systems for dealing with events, internal and external, as Dorothy Lee (1959) has emphasized.

A growing sophistication about theorizing and the development of conceptual models is necessary if we are to develop a projective psychology which will go beyond accepted assumptions and dubious conceptions that have been productive, but which are becoming increasingly obsolete in the emerging new climate of opinion. We urgently need some concepts of organized complexities, as Weaver (1948) has urged, and assumptions of non-linear processes, as Wiener (1959) suggests, to replace the conventional patterns of research for relations between two or three variables observed in a sample, and the assumptions of linear relations between events.

A projective psychology offers op-

portunities for creative, imaginative conceptualization and escape from the accepted way of thinking and investigating which are blocking more fruitful studies and more productive thinking about human personality.

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Recent Developments in Psychoanalytic Ego Psychology and Their Implications for Diagnostic Testing

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The accusation is sometimes brought against psychoanalysis that it does not change, that it is a conservative and even procrustean set of concepts, protected in their inviolacy by being defined in untestable terms. There is this much truth in the charge: that psychoanalysis does not have all of the built-in guarantees of change that an experimental science does, and many analytic concepts do need operational restatement. But psychoanalysis is an empirical science, with a clinical method which, though crude, does continually confront the theory with factual challenges. Out of such confrontations, analysts within the Freudian mainstream have made many and far-reaching changes in psychoanalytic theory during the past 30 years. Since all too few psychologists are familiar with the primary sources of psychoanalysis, and since there is always a sizeable lag before new contributions find their way into texts and other secondary sources, and an even longer lag before they are absorbed by teachers, it is no wonder that even the major developments of the last few decades are unknown to a large proportion of clinical psychologists—not even to mention our non-clinical confreres!

In the space of a brief paper, I cannot state fully enough to be convincing all the theoretical changes that I find most significant. So I shall be severely selective, and focus on those contributions that seem to me to have the most direct bearing on diagnostic testing.

I.

The first great change that has taken place is an increased recognition of the role of the ego in the determination of behavior, with a conse-

quent dethroning of the drives as the overwhelmingly important class of determinants. Psychoanalysis had been, as Merton Gill puts it (1959), a reductionism to drives: for the first 30 years of their new discipline, analysts were so excited about Freud's basic dynamic discoveries that they were interested in little else. By a kind of cultural lag, even today we hear the term 'dynamics' misused and overused in a cultish kind of way—whatever is desirable, modern, or deep is called *dynamic*, so that the word has lost much of its original meaning. Of the five metapsychological points of view recently described by Rapaport and Gill (1959), the dynamic was the first to be fully developed; it dealt with the *forces* that actuate men. The fundamental observation was that certain behaviors *must* be carried out; they have an urgency, an importance, which is easily recognized and which contrasts with the placidity and optional character of other behavior. This imperious quality suggested the activity of drives, a concept Freud needed to explain neurotic symptoms, dreams, slips and other forms of behavior that seemed so obviously to be forced into existence. The other principal dynamic concept was conflict, the result of the head-on meeting of opposed drive-forces. When you deal with any other determinants of behavior, you go beyond dynamics¹—and, incidentally, by going beyond dynamics you start to use some of the contributions of ego psychology during the past 30 years. These other determinants can be briefly indicated by citing the other four metapsycholog-

¹ Despite the fact that defenses play a role in conflict, and thus are usually inevitably involved in any discussion of dynamics, defense is basically a *structural* concept.

ical points of view: the economic (considerations dealing with energies involved in thought and behavior), the genetic (developmental considerations, the contemporary residue of personal history that affects behavior), the structural and the adaptive. The last two I shall discuss at greater length.

The structural point of view and ego autonomy. Any discussion of structural considerations inevitably raises the issue of autonomy, a concept that was introduced by Hartman (1939). In any science, if there are forces bringing about change (dynamics), these forces must operate within structures: containing, guiding, blocking, or facilitating states of affairs within the organism. Since psychoanalytic ego psychology is pure psychology, in which histological and physiological concepts play virtually no role, the energies and structures with which ego psychology is concerned are as abstract and hypothetical as the barriers within Lewin's *livespace*.² The matrix within which forces and energies operate, and which creates the ground rules they must obey, then, is structure.

The ego, superego and id are only the beginning of the structural concepts, only the grossest outlines. The ego is itself composed of a hierarchic organization of structures, which are best known by their functions. Indeed, the ego is often defined as a group of functions; yet function presupposes and logically implies structure: something has to do the functioning, and that something is structure.

The most familiar and obvious examples of psychic structures are the

defenses. If you visualize a repression as a dam holding back the floodwaters of a drive-impulse and its associated memories, you are naturally using a structural metaphor for a structural phenomenon. In describing learning, we tend to use similar metaphors, such as the *building* of a habit. In psychoanalytic theory, learning is structure-building, and a habit is a structure—a more or less permanent change in the way the elements of psychic structure are organized, to function differently.

The two examples, defenses and the residues of learning, are instances of only one general class of structures. Hartmann, in his epoch-making monograph, *Ego psychology and the problem of adaptation* (1939), set up a broad but useful classification of all psychic structures, which he called *apparatuses*: the apparatuses of *primary autonomy*, and those of *secondary autonomy*. The examples mentioned so far are apparatuses or structures of secondary autonomy, those that grow out of inner conflict and through contact with the external environment. Autonomy, for Hartmann, means the ego's degree of independence from the drives and conflict. What, then, are structures of primary autonomy?

The apparatuses of primary autonomy are those psychic structures that are given by heredity (*not* developed out of conflict), which through evolutionary development pre-adapt the human child to an *average expectable environment*. (You see, we cannot really talk much about the structural point of view without bringing in the adaptive one.) They consist in the basic capacities and abilities of the organism: the abilities to perceive, to learn, to remember, to think, to move and act, as well as those that are more familiar to psychologists—intelligence, talents, and inborn gifts of all kinds.³

² This does not mean, however, that it may not ever be possible to specify the links that connect cathexis with the physical energy of the neurones. Psychoanalytic theory deals with resultant forces and energies, which we cannot today analyze, but it need not be a vitalism. Likewise, it should in principle be possible ultimately to identify psychic structures with organizations of nerve cells (as Hebb has tried to do with his concept of cell-assembly and phase sequence).

³ Calling them autonomous highlights the fact that these functions operate relatively free from interference by wishes and affects. The great difficulty experimenters have found in demonstrating what Mur-

To Hartmann's list, Rapaport (1959) argues, *thresholds* should be added: sensory threshold apparatuses and drive thresholds. Noting that these were many of the most important components of the ego, and that they were all present — at least in germ — at birth, Hartmann took up certain late suggestions of Freud's (e.g., 1937) along these lines and (with Kris & Loewenstein, 1946) proposed that the ego did not develop from the id, but that both grew out of an initial undifferentiated phase in which ego rudiments were clearly present.

If there have always been parts of the ego that were not involved in the passionate urgencies of drive, and if these are structures that channel and constrain the discharge of drive energies, then the ego is not such a weak creature as Freud depicted it in *The ego and the id*. Moreover, Hartmann's name for the other class of structures, those of secondary autonomy, constantly reminds us that the beach-head of calm provided by the primary autonomies can always be enlarged by the development of new structures. The natural course of development, then, is seen to be enlargement of the conflict-free sphere, building on the base of the primarily autonomous apparatuses further structures that serve to tame the drives, slow them and harness them to useful work, and thus the development of ego-strength.

One feature that differentiates Hartmann's concept of autonomy from G. W. Allport's (1937) somewhat similar functional autonomy may be summarized in three words: autonomy is relative. Not absolute. The drives are always there, ready to take over. Just as a river can take over and cause a flood if its dikes grow weak or if the volume of the waters increases, just so the apparatuses of both primary and secondary autonomy may be inundated by the drives if the structures

are weakened (decompensation) or if the drive energies are increased (as they are for example at puberty). Much of psychopathology can be conceptualized as the result of weakened structures and the spilling over of drives.

Let's take another look at the psychoanalytic theory of motivation, as it emerges from these concepts of drive and structure (Rapaport, 1960). Structures are the restrainers and channels of the drive energies. The drives provide the original push, the get-up-and-go, but structures determine *where* we go, by what realistic routes we may find satisfactions, and they slow us down from the headlong rush that the drives naturally impel. Moreover, each new structure gives rise to new motives, as in the model: anal smearing impulse \rightsquigarrow reaction formation \rightsquigarrow need for cleanliness. Psychoanalysis assumes that everyone starts out with the same basic drive-sources of motivational energy (though with variations in constitutional endowment of drive-strength), but individuality of motivation and behavior is supplied predominantly by unique endowments of primarily autonomous apparatuses and by the unique experiences that bring the secondary apparatuses into being. Clearly, everyone starts out with simple and crude structures, permitting only crudely differentiated behavior; psychoanalysis assumes (for the facts of psychopathology require it) that these old structures need not go out of existence — they simply drop from sight as other structures are built on top of them. The usual course of development is that as more structures are added, behavior becomes less hectic and more differentiated. If the mature structures break down, however, there is an automatic falling-back on the next lines of defense, which are uncovered. This is a structural explanation of the regression and the agitation that occur in mental illness; to be complete, it would have to include dynamic, econ-

phy (1956) calls autism, or the effect of needs on perception, is testimony to this autonomy.

omic and other factors (Rapaport and Gill, 1959).

Let us pause for a moment and note that what I have been describing is a *hierarchical* conception of structures. This is what is meant by the layering of defence; "structural hierarchy" is just a more generalized statement of it.

In physics, it has been noted that, as energy is subjected to changed structural conditions, it is transformed with qualitative changes. That is what happens when you close a switch and allow electrical energy to encounter the special structural conditions of a light bulb; it is transformed into radiant light and heat. Similarly, in psychoanalysis, Hartmann has proposed that drive energy undergoes a kind of qualitative change as it encounters the increasingly complex structural hierarchies that are built up developmentally. This change he calls *neutralization* (Hartmann, 1950). The qualitative change that is involved is a loss of the general instinctual orientation that the drive had originally, that is, desexualization or deaggressivization. This concept was basically a generalization of Freud's concept of sublimation, which had been conceived of as involving specifically libidinal energies, but it had the important consequence of linking the kind of phenomena that Freud was talking about to the development of highly differentiated structures.

Rapaport has elucidated and expanded Hartmann's concept of autonomy in two important papers (1951, 1958). In particular, Hartmann was concerned with the ego's autonomy from the drives, and only hinted at another important area, which Rapaport calls *autonomy from the environment*. The stimulus-response model of behavior, he says, pictures man as entirely at the mercy of the environment: if it supplies a certain stimulus, man must jump, or salivate, or blink. And indeed, in certain kinds of pathology we see more or less human crea-

tures who have little autonomy from the environment; for example, in severe brain damage. When the damage knocks out drive, the patient lacks spontaneity, becomes purely reactive, and is easily influenced. It is the drives, ultimately, that guarantee the normal man's autonomy from the environment, Rapaport points out, just as contact with the environment provides the ultimate guarantee of autonomy from drives. An additional guarantee of both types of autonomy, he goes on, are the *structures*, the apparatuses of primary and secondary autonomy. Since in general the same structures provide both kinds of autonomy, we find that the degree of one sort of autonomy a person has enables us to gauge his autonomy of the other kind.

So far, I have been discussing the effects of structures on behavior, mostly implying action. But now let's consider the implications of the model I have been describing for thought and affect. Take affect first (Rapaport, 1953). In young children, we see a relatively narrow range of emotions; what we do see is intense and at times overwhelming; and largely it seems to be a form of drive-discharge. If so, and if as we have seen, drives are increasingly neutralized and changed in quality by the growth of structures, the quality of affects must change, too. That's an important part of what happens: the variety of affects greatly increases, as does their subtlety, and fineness of attunement to situation, while their usual intensity is considerably less than in childhood. All these are indications of a growth of structures, some of them specific to the control of affects, some probably more general structures. In this developmental process, which Fenichel (1941) called "taming," an important change takes place: the ego once suffered affects passively, but now it gains control over them and uses them actively as a set of *signals*: signals of danger, of impending gratification, of something good or bad, to

be approached or not. Obviously, such signals are of the greatest importance for effective (that is, *adaptive*) action and thought. When the structures that regulate the attunement of affect to situation and thought decompensate, then we see emotional inappropriateness, one of the hallmarks of schizophrenia. And, as Rapaport (1953) says, "Rich and modulated affect life appears to be the indicator of a 'strong ego'."

Thought must use affects as signals, too, but the refined use of affects in thought is a late achievement, an essential part of secondary process functioning. The psychoanalytic theory of thinking may be summarized (or oversimplified) as follows: the primary process is gradually superseded by the secondary process, and is gradually brought under flexible control so that it can be turned on or off at will. Just as there is a continuum of gradually developing structures, and a resulting continuum from raw drive to neutralized energy, just so there is a corresponding continuum from primitive, drive-dominated thinking with fluid, free drive energies, to realistic, logical, purposive thinking that operates with bound and neutralized energies. Indeed, it is the growth of structures that brings about the development of secondary process. But the primitive, primary process is no more uprooted by the secondary process than are the crude early stages of defense wiped out by more sophisticated structures. Even though it is latent while a scientist, let us say, carries on his routine work, more primary forms of thought take over as he sleeps and dreams, and—as Kris (1953) has argued—he probably uses some degree of primary process in the creative aspects of his work, forming new concepts or getting hunches about new experiments. This controlled and adaptive use of primary process is the now-popular concept, regression in the service of the ego. As Schafer (1958) has recently demonstrated, it usually takes a strong and

flexible ego to allow such temporary regressions, and also a firm sense of identity (cf. also Gill and Brenman, 1959).

Another of Rapaport's contributions to ego psychology is his structural concept of states of consciousness (1957). Freud recognized that conscious - preconscious was a crude dichotomy, but he never worked out as Rapaport has done the descriptive and systematic details of the many states and types of awareness. For our purposes, perhaps the most important of the points he makes is the proposition that the less vigilance, reflective awareness and capacity to direct attention, the more do the accompanying thought processes take on characteristics of the primary process, and the less secondary-process thinking is apparent.⁴ Rapaport also points out the prevalence of certain cloudy states of consciousness in various types of psychopathology, such as fugue states and psychoses. Yet in all states of psychic functioning, he insists, there is some degree of synthetic function: the human mind always strives for one or another type of integration (Hartmann's *fitting together*; cf. also Nunberg, 1948). In this respect, he makes explicit and salient an insight Freud seems to have had from the beginning. The nature of that integration is a function of structural conditions (the kinds of defenses and controls that are operative) and economic conditions (the degree of binding and neutralization of the cathectic energies involved, and the balance of drive energy and hypercathexis); for example, there is integration in the primary process as well as in the secondary, though of a qualitatively different kind.

The adaptive point of view. During the above discussion of innovations

⁴ Freud laid down the foundations of this formulation, almost from the beginning of his theoretical work, in his conception that the binding of drive cathexis was accomplished by means of hypercathexis (see Holt, 1960b).

in the theory of ego structures, I have had to mention the concept of adaptation several times. Almost unknown in psychoanalysis 30 years ago, adaptive considerations are since the work of Hartmann (1939) considered to be so fundamental that Rapaport and Gill (1959) list the adaptive as one of the five fundamental metapsychological points of view. In the one bold step of his monograph, Hartmann broadened the scope of psychoanalytic theory so that it can embrace and integrate all the contributions of academic psychology, sociology and anthropology, and even ethology.

There is much that could and should be said about Hartmann's concepts of adaptation if there were no limitation of time. I shall content myself with only one point. In discussing the growth of secondarily autonomous structures, Hartmann makes the important observation that once a structure is built, it can be used for other purposes than those of defense. Through what he calls a change of function, a defense may be used as a means of adaptation; in George Klein's terminology, it becomes a control (and its effects on thinking and perceiving are called *cognitive controls*; (cf. Gardner, Holzman, Klein, Linton and Spence, 1959). Let me give you a brief clinical example.

Some years ago in Topeka, I tested a beady-eyed, handle-bar-moustachioed young man who had been admitted to the V.A. Hospital. He was a detective on the police force of a Kansas city, and apparently a good one. In his Wechsler-Bellevue, he was outstandingly good at Picture Completion; and his sharp eyes picked out the salient details of the TAT cards from which he proceeded to deduce the stories. Here were classical signs of projection, and indeed, the clinical history showed an unmistakable paranoid break. Yet there was every sign that the cognitive structures that gave rise to these test performances had been in existence for quite some time, before any clinical evidence of pro-

jection. The point is that they had been used adaptively, since the perceptual acuity and the suspicious, inferential turn of mind were highly useful assets for a detective. Just so, Hartmann argues, any defense may have its adaptive uses, and he points out the adaptive significance of dreams, fantasy, affects and other aspects of human functioning that don't have any obvious survival value.

The psychosocial point of view. This example brings us to the exciting new developments in classical psychoanalytic theory bearing on the social and cultural embeddedness of the individual. In 1939, Hartmann wrote that the primary reality man must adapt to is a social reality, and he also stressed the two-way nature of this process: man shapes society as well as being shaped by it. In order to attain a complete understanding of any human behavior, he showed, one must elucidate its relevance to cultural traditions and the influence of the behaving individual's place in some social structure.

But the strikingly parallel (though largely independent) contributions of Erik Erikson (1950, 1953, 1954, 1959) spell out the broad generalizations that Hartmann laid down, giving them extraordinary richness of clinical and cultural detail. Erikson's is a theory of culture and personality that grows out of his immersion in the Freudian tradition and his anthropological field work. His sophistication in the social sciences easily equals that of such non-Freudians as Fromm, Horney, and Kardiner, but his account of the processes of acculturation differs from theirs in that he retains and develops Freud's concept that the individual has inborn biological drives and other properties of which the society must take account. In Erikson's terms, the person has a genetically social nature, and a built-in series of developmental stages through which he must go. Erikson's epigenetic conception of development retains the best of Freud's theory of

psychosexual development, but with three principal changes.

First, he notes that each of the zones that successively attain a place of principal importance has one or more *modes* of operation, basic patterns of dealing with reality. For example, the mouth lends itself to *getting* (i.e. receiving) and to *taking*, the anus to *holding on* and *letting go*, and so forth. For our purposes, the important point is that Erikson describes the process of estrangement (comparable to Hartmann's change of function), or autonomous separation of modes from the zones where they originated. They become general ways of approaching the world, and Erikson's clinical examples (from play configurations, dreams, neurotic symptoms, social behavior, etc.) vividly show the utility of this way of looking for consistencies in behavior.

Second, essential to Erikson's conception is the idea that the stages of development comprise a series of "potentialities for changing patterns of mutual regulations" in the family, which is itself a system of mutual dependence and regulation. Moreover, the society (mediated by the caretaking persons) meets each developmental phase with institutions specific to it, and for each mode provides social modalities which enable the individual's behavioral patterns to find socially useful and adaptive opportunities. When a striving meets a social modality that provides a useful place for it, it develops without conflict and is handled by controls instead of by defenses.

Third, Erikson is the first psychoanalyst to systematize an epigenetic theory of ego development beyond early childhood. His eight stages of man cover the entire life-cycle, sketching out the major developmental crises from birth to old age; each has its phase-specific developmental task which should be solved at a given time, though the solution is prepared in previous phases and is worked out further in subsequent ones. Erikson

incidentally has pointed out the relevance for ego-strength of a successful solution of the earlier stages, the problems of trust vs. mistrust, autonomy vs. shame and doubt, initiative vs. guilt, industry vs. inferiority, and identity vs. identity diffusion.

The last of Erikson's contributions I'll be able to mention is his concept of *identity* (Erikson, 1950, 1959). Clinically, the importance of this concept is indicated by Erikson's dictum:⁵ "The study of identity . . . becomes as strategic in our time as the study of sexuality was in Freud's time." Once you have learned the clinical picture of identity diffusion, which Erikson first described, it is astonishing how often it turns up, playing a major role in a great variety of neurotic and borderline conditions, especially in late adolescents and young adults.

Identity is on one level roughly equivalent to the familiar "self-concept"—the feeling a person has of being himself, the images and ideas of a continuing individuality. Yet no other theorist has succeeded so well as Erikson in showing how such highly personal constructs are intimately dependent on the role-opportunities offered by a society and on its traditions about the kinds of person it is possible—and either good or bad—to be. The sense of identity (as compared, for example, to self-esteem) is an intrinsically social as well as individual concept: it is the feeling of being a worthy person because one fits into a coherent and valued order of things. Erikson writes: "The growing child must, at every step, derive a vitalizing sense of reality from the awareness that his individual way of mastering experience (his ego synthesis) is a successful variant of a group identity and is in accord with its space-time and life plan."

Previously, in psychoanalysis the role of culture in personality development had been conceptualized only in

⁵ All unidentified quotations are from Erikson (1950).

terms of the superego. Erikson shows how intimately all of development is cog-wheeled with social roles, expectations, and demands, and how culture shapes ego identity as well as the superego. Indeed, "only an ego identity safely anchored in the 'patrimony' of a cultural identity can balance the superego in order to produce a workable equilibrium." In the diagnostic testing of depressed patients, I have been struck by the great clinical utility of this insight, especially in helping with the delicate question of prognosis.

II.

Let us turn now to the application of these developments to diagnostic testing.^a

First, and most generally, I hope it is agreed that the principal tool of the clinician is his understanding of personality, its development and its decompensation into psychopathology. If the tester can find a theory that will broaden and deepen his understanding of people, how they get sick and well again and go about leading useful lives, it should have a variety of intangible benefits to his work. He will be better able to integrate the fragmentary glimpses of a person that his primary inferences from test data afford; he will not degenerate into a plodding routine if his horizons are stretched by the challenge of fresh ways to look at his data. All of these general benefits the recent developments in ego psychology promise. Though the goal is not yet achieved, we are much closer to a comprehensive, integrated, and continually developing theory of man and his behavior.

One of the most direct ways that theoretical advance can help the tester is through its enrichment of his *test rationale*: the understanding of the

processes by which test responses come about, and the relation of these processes to enduring aspects of personality. Let me give just a couple of concrete examples. First: in a recent contribution to a symposium on the TAT (Holt, 1960a), I applied Rapaport's ideas about states of consciousness and types of thought organization that accompany them, and Kris' concept of regression in the service of the ego, to a re-examination of the TAT's rationale. I was able to show that the common habit psychologists have of referring to the TAT as a test of fantasy ignores critical differences between stories and reveries or day-dreams as cognitive-affective products, and can lead to serious misunderstanding. Second: in two recent papers, David Shapiro (1956, 1960) has applied Rapaport's generalization of the theory of autonomy (and his closely related ideas about activity and passivity) to the understanding of responses to color in the Rorschach test. If I may restate the argument briefly, it is that since it is one set of structures that achieves autonomy from drives and autonomy from the environment, the degrees of the two types of autonomy are closely correlated. A person's handling of the powerful environmental stimulus of color, then, shows at work the structures he also uses to control his drives and the drive-derivatives of impulse and affect. This statement is probably too brief to be convincing, but I believe that it is an important advance in our movement away from the blind empiricism of test "signs" to a sure theoretical grasp of how and why our tests work.

The rationale for a test is not complete unless it includes conceptualization of the *situation* of testing, the patient's understanding of and values about it, and his test behavior as well as his responses. The adaptive point of view focuses our attention on such behavior as a response to a real situation with various explicit and implicit demands, *as well as* its transfer-

^a The principal applications of ego psychology to diagnostic testing have been Rapaport, Gill & Schafer (1945, 1946), and Schafer (1948, 1954, 1958), but the contributions of Bellak (1954) and Wyatt (1958) are also noteworthy.

ence significance. Thus, some kinds of test behavior that we might be inclined to overinterpret as signifying transference or psychopathology (e.g., anxiety about being tested) may turn out to be reasonably adaptive reactions to a situation as defined by the patient in terms of his life experience, subculture, and anticipations. Or if the subject is an applicant for a psychiatric residency, it is understandable—and in terms of our definition of the testing situation, adaptive—for him to give “deep,” pathological-sounding content in the Rorschach or TAT, to show his insight or psychological-mindedness. Whenever there is a surprising amount of seemingly regressive, pathological material in test responses, the tester will do well to consider the hypothesis that it is an adaptive, controlled regression in response to a perceived demand for it.

Therapists have set a style, and testers have followed them, in fixing their clinical focus on the dark, unconscious recesses of the individual psyche. Reading many test reports, one would hardly guess that the subject of the deep dynamic formulations was a contemporary American citizen, trying to do a certain kind of job in a milieu offering a variety of supports and pathogenic stresses. Hartmann and especially Erikson should teach us to broaden our view, not only by bringing fresh concepts to bear on our test data, but also by accepting the fact that tests alone cannot give all the information we need to make the most sense of the purely test data themselves. It is much more important to almost any consumer of test reports to know, not just that there are oral-dependent longings and an Oedipal fixation, but how all of this shows itself in behavior. To do so, the tester must have some idea about the determinants of a person's behavior that lie outside the subject's skin: in short, his average expectable environment. Hartmann's sound formulation, that a person's mental health can be gauged only in rela-

tion to his average expectable environment, should teach the tester that he cannot assess the degree of incapacitation nor the prognosis without some outlines of the particular social and cultural setting the subject has come from and to which he must return.

Consider again, for a moment, the Kansas detective I spoke about earlier. We know that it is extremely difficult to achieve any far-reaching reconstruction of a paranoid personality structure. How important it was to know, then, that projection had operated adaptively for him in the past, and that a social niche was waiting for him that not only didn't require the extirpation of his projective structures, but positively demanded them! Ego psychology can help us understand how the pathological implications of the defense can be counterbalanced, in this example, by a set of values (being a decent cop, for example), by superego controls and by external social channels for expression so that the pressure of undischarged impulse doesn't get too strong, and with this understanding we can better assess the kind of therapeutic work that needs to be done and the likelihood that it will lead to socially adaptive behavior again.

I want to dwell a little more on the point that a structure may have adaptive as well as defensive functions, depending on its meshing with socially-offered modalities, for to me it is one of the most valuable of leads in the test assessment of a person. Even so primitive and unpromising a defense as denial can have its adaptive uses, as the work of Weinstein and Kahn (1955) has beautifully shown. Though usually associated in our minds with psychosis, denial is used not infrequently by persons in the neurotic range. In someone who has a good many pains or griefs that are not easily alleviated, denial of illness by a pollyanna insistence that all is well, trying and tiresome though it is for others, still keeps many such people out of hospitals and chronic invalid-

ism, which could so easily overtake them without it.

There has been a good deal of talk in recent years about the tendency of clinical psychologists to overemphasize pathology and to neglect the positive, health-giving aspects of personality. This has been at times accomplished by a feeling of bafflement: what are these mysterious strengths? where can we find them? do we need new types of tests to provide the right data? In large part, the data are not only right in our hands, they are contained in the very aspects of tests that we have been interpreting as pathological. But once we grasp the concept that a defense is a thought-pattern, a structure that *can* operate adaptively depending on its setting (inner and outer), we can get to work looking for the signs that it does or does not make a positive contribution to the person's success in living.

A final point about structural matters: The concept of hierarchy, the layering of defences and other structures, is one that can help us to understand and to piece together various seemingly contradictory or confusing pieces of test evidence. If we find indications that our patient is afraid of other men, is attracted to them in a passive, homosexual way, and also that he seems to have a good deal of hostility towards men generally, it will be helpful to know about the layering of impulses and defenses that Knight (1940) and Gill (1947) have described in paranoid patients. All of these trends, which seem so mutually exclusive, may be true on different levels—whereupon it becomes the task of the tester to try to sort them out and reconstruct the hierarchy. The hierarchical point of view also should serve as a sceptical barrier against a too-ready acceptance of any first approximation to the formulation of a personality. It is always more complex than we think.

Many of the other implications that I see in these theoretical developments also fall under the heading of the

positive that we can accentuate: in short, indicators of ego-strength. I have referred to the breadth of interests and the extent of the conflict-free sphere of the ego as indicators of neutralization, as thus of the integrity of autonomy-giving structures, and also to the similar implications of the range, subtlety, and modulation of affects. We can also find relatively direct indications that structures are intact or crumbling in the preservation of intellectual functions demanded by intelligence tests, and in the person's capacity to control and exclude signs of preoccupations, negative affects, inappropriate drive-references, and the like.

One of the implications of ego psychology that has interested me most is that we must assess the manifestations of the primary process in our test data most carefully if we are not to make serious diagnostic errors (cf. Holt & Havel, 1960). One reason that many psychologists have made themselves notorious for the capacity to find schizophrenia in every patient is the tendency to accept any indication of condensation, symbolical thinking or the like as a hallmark of schizophrenic thought-disorder. True, one can describe that disorder at a first approximation by saying that the primary process has emerged in waking thought, but such a formulation overlooks Hartmann's and Kris' valuable insight that the primary process can be used *adaptively*, as well. Indeed, the ability to allow a controlled and flexible regression to primary modes of thinking is another sign of ego strength, as opposed to the rigidity that excludes all such material and the state of decompensation or faulty structure-development that allows uncontrolled and involuntary breakthroughs of the primary process. The task, then, becomes one of finding test indicators of the degree of control over the primary material, the affect that accompanies its appearance, and the degree to which it disrupts other simultaneous cognitive

functioning (such as reality-contact). This applied ego-psychology will, I believe, enable us to distinguish creativity from borderline psychosis — a distinction that is not always easy to make from test data.

Erikson has provided quite a number of valuable leads to the assessment of health as well as illness. In his account of the growth and crises of the healthy personality, which presents his ego epigenetic stages, Erikson lists the main types of successful and unsuccessful solutions to each of these developmental tasks. And as he has suggested in another paper (1953), it is essential to an assay of a person's assets to know whether he has developed basic trust or mistrust, autonomy instead of shame or doubt, and so on. Here are indicators in the *content* of test responses that complement the other, mainly *formal*, signs of ego strength or weakness.

Erikson's penetrating descriptions of the various developmental stages can also be helpful to the tester in helping him understand the special meaning of test data in terms of the age of the patient who gives them.⁷ He shows how various may be the significances of a bodily mode (e.g., retaining) depending on its appearance and use at an appropriate developmental phase, an earlier or a later one. The same kind of considerations apply across the whole life-span; and the larger scheme of ego epigenesis provides a far richer source of understanding than the simple, earlier idea of a few developmental crises and changes in drives (e.g., adolescence, menopause). By highlighting developmental facts, such as the extreme but not necessarily malign regression in late-adolescent identity diffusion Erikson helps the psychologist to realize that any given test configuration may have quite different significances when produced at various points in the life cycle. We need more than just age-level norms for childhood, there-

fore; norms need to be gathered, and interpretive principles restudied, for all the rest of the major period of adult life.

For its relevance to the issue of personal strengths as well as its implication for pathology, Erikson's concept of ego identity is one the diagnostic tester will do well to study closely and add to his stock of everyday working tools. Test data often lead themselves admirably to interpretation in terms of the kind of identity a person has worked out for himself, as I tried to show in my analysis of the TAT of Jay (1952). Do the various self-conceptions adumbrated in the tests fit together into a cohesive organization, or are they mutually contradictory identity fragments? Does the patient have a secure sense of identity, which can be a support and a bulwark, or does he suffer from a diffusion of identity? Does his identity demand a very limited type of social setting (and if so, is he likely to be able to live in such a setting), or is it more generally viable in our society? Does it show signs of being rooted in a continuous tradition, or does the identity a person is trying to work out for himself cut him off from his parents, his ethnic or cultural subgroup, his own past? Erikson's writings give many vivid examples of the application of these and related issues to case data, and are full of suggestions for the diagnostic tester.

Finally, the work of Erikson should be closely studied by the testing psychologist because it so beautifully exemplifies a truly organismic, biosocial approach to personality. For example, in the case histories with which he opens *Childhood and society* (1950), there is a masterly interweaving of three types of considerations: processes inherent in the organism (constitutional structures, maturational sequences, etc.), the organization of experience in the individual ego (defenses, identity, modalities, etc.), and social organizing forces (the groups in which a person lives, their structure

⁷ I am grateful to my colleague, Dr. Fred Pine, for calling this point to my attention.

and cultural heritage). If we as diagnostic testers can approximate these brilliant performances and portray in such depth real human beings, we shall have profitted by the best that modern ego psychology has to offer us.

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Bodies in Schizophrenic Rorschach Responses

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Of the many ways in which the schizophrenic Rorschach record may be approached, starting from one or another of the basic concepts advanced in dynamic psychiatry to define and organize the varied phenomenology of schizophrenia, that concentrating on the disruption of the body ego is one of the most fascinating. Its value in Rorschach research has already been demonstrated in some respects in the extensive series of studies by Fisher and Cleveland (1958). These investigators have concentrated on two variables, the definiteness and the permeability of ego boundaries, and have studied the manifestations of these specifically in the test content. Zucker (1958) has made a related, significant contribution, although she was particularly concerned with the broader issue of ego boundaries and explicitly avoided going into the manifestations of disturbed body ego as such in Rorschach responses. The range and definition of variables in her study is broader and more clinical than that of Fisher and Cleveland; she included analysis of some aspects of Rorschach scores, verbalization of responses and indications of thought disorder, as well as content.

These reports do not, however, constitute an exhaustive treatment of the problem. On the one hand, other phenomenological aspects of body ego disturbance may be investigated, such as the body ego's inner organization, vitality and coping with stimulation, and, on the other, additional aspects of the Rorschach record may be brought into the analysis of disturbed "ego boundaries" to give it fuller meaning. It is my aim in this paper to extend the study of body ego disturbances manifested in the Rorschach records of schizophrenics and to link the resulting observations to the

broader issues of impaired ego boundaries and object relations.

I must first set forth certain generalizations about the relation of Rorschach responses to subjective experience, and then, more specifically to certain aspects of schizophrenic subjective experience. Subsequently I will analyze a Rorschach protocol in order to illustrate the application of those generalizations.

Rorschach responses, the inner world and the body ego. Outstanding aspects of subjective experience, of the "inner world," are expressed in the imagery language peculiar to the Rorschach record. By "inner world" I do not refer to the general organizational principles of a given personality as customarily emphasized in basic Rorschach texts. I refer instead to the quality of existence, however dim, known to the patient. The inner world comprises a multitudinous population of conscious and unconscious, partial and total images of oneself and others. Some of these images are fleeting and variable, others fixed and unchanging. Some are embedded in proliferated fantasy constructions, others are fragmentary and isolated. Some are pale and soft-spoken, others are vivid and loud. Some are possessed of great force of a benign or hostile nature, while others are neutral records of the facts and the tools of living. Affects color this inner world and are best understood when seen in relation to its imagery.

The body ego is part of this inner world and also defines its boundary. It comprises the objectively discriminable, the distorted and the fantasied sensations, positions, capacities and inter-relationships of the skin, bones, muscles, organs and functions of the body, their movement or change in space and time, and their apartness

and difference as a unity from other bodies in the environment, however similar and however close. Developmentally, the shaping and unifying of the body ego is greatly influenced by identifications, that is, by the (mostly unconscious) taking over of properties of other bodies and experiencing them ultimately as one's own in a deep and abiding fashion. The fruits of identification are to be distinguished from the ravages of aggressive and libidinal introjections and reintrojections of projected images; the latter (mostly unconsciously) assault the unity and integrity of the body ego, and they tend to restrict it to the role of tool, extension or conglomeration of other bodies. It is the latter we discover in relatively stabilized form in neurotic symptoms, and, most of all, usually in fluid fashion, in the bizarre body experiences of schizophrenics (Erikson, 1956; Federn, 1952; Fisher and Cleveland, 1958; Pious, 1950; Schafer, 1958a; Winnicott, 1958; Zuckerman, 1958.)

In Rorschach records of all sorts we find colorful and revealing expressions of the subjective experience of the body in one or more of its key aspects.

The body ego in schizophrenia and its relation to the Rorschach test stimuli. In schizophrenia there is a blurring, sometimes to the point of virtual disappearance, of the boundaries and articulation of the ego.¹ It must be recognized, however, that except in the most rigidly stabilized schizophrenic conditions, there occur continuous fluctuations in the patient's level of organization, and corresponding fluctuations in the type and degree of organization of his body ego. It is therefore not accurate to speak

of *the* body ego or *the* body image of a particular schizophrenic, for where boundaries are blurred and in flux there is no defined and enduring ego to which to refer experience that, from the standpoint of a highly organized and differentiated observer, is internal to that patient. Rather, one can speak only of "bodies" as I have done in my title. This eerie title reflects the eerie experiences in question. At any given moment, the schizophrenic may note aspects of external reality only by way of transformed subjective experience of his own body, just as he may note aspects of his own body only by way of apparent or real changes in external objects. This is often conspicuous in therapeutic interactions where the schizophrenic may report a change in his subjective state that is actually an oblique recording of a change in the therapist's state and *vice versa*. A heightening of the therapist's unconscious irritation, for example, may be "perceived" by the patient only as an "emptying out" of his own interest and motivation. Or the patient's feeling wooden may be "perceived" as unresponsiveness of the therapist. Thus, on the regressed levels of organization on which the schizophrenic often functions, especially when his restitutions are not well established, it is not possible to designate with certainty the body in question at any given moment. The patient is not a reliable communicant of his source of cues and of their original content.²

We may also question whether it is correct or useful to assume that it is the disturbance in his body ego that is primary to his disturbed perception of external objects. There are advantages to thinking in terms of regression to a level of organization of such a nature that the differences between inner and outer that are so important

¹ Fisher and Cleveland (1958) and Zucker (1958) have provided a detailed summary of the pertinent literature. Federn's formulations (1952) are especially relevant to the formulations in the present paper. The concept "body self" might be conceptually more desirable than "body ego," but it raises problems in its own right which I prefer to bypass at this time.

² With progress in treatment, the patient communicates more reliably and the therapist translates more exactly. In the Rorschach situation some indeterminacy is inevitable.

on higher levels of organization have no certain meaning any longer. It is this *level* of organization that is important, and the disturbed experiences of one's own body and of other bodies perhaps should be seen as concomitant manifestations of this level. Accordingly, for purposes of Rorschach analysis, we may regard as pertinent in this connection references to the boundaries, inner articulation and interaction of *all* entities, be they persons, objects, or things in nature. Formed and formless, articulated and diffuse, they all count. Also pertinent are many subjective attitudes conveyed through modes of verbalization and expressive movements during the response process.

If we turn to the test stimuli in the light of preceding discussion, we may consider the blots themselves to be equivalent to bodies. Their treatment as stimuli, that is, the use of their colors, shadings and forms, and the scores reflecting this usage, then can be seen to be additional related avenues of expression of the subjective experience of bodies. The relative formlessness, meaninglessness and lack of inner articulation and relatedness of the areas in most of the ink blots act as forceful external realizations of, or parallels to, the schizophrenic's subjective experience of all bodies as having just these uncertain properties much or all of the time. That is to say, the blots are a kind of objectification of the schizophrenic's body ego regression. (The same appears to be true, though in not the same way, in the case of the organic patient, whose blurring and fragmentation of the inner world and of external reality is realized or paralleled in the ink blots.) The schizophrenic patient in therapy reveals to us that ego regression is extremely threatening to him; correspondingly, so may the ink blots be, although the dangers signified by them are usually experienced in a microcosmic manner with small quantities of anxiety or other affect (Schaffer, 1954, pp. 74-113). Of course, in the

case of certain schizophrenics, borderline schizophrenics and manic-depressives, the affects experienced may begin to become macrocosmic and contribute to the sometimes observed gross disruptions of the test relationship.

I am following here, in some respects, a suggestion of Alcyon Baer de Bahia (1950) to the effect that the Rorschach stimuli represent a "loss of objects" and that the test responses are restitutive efforts, that is, efforts to "restore objects." This author seems to assume that this loss of objects is experienced equally by all persons taking the test, whereas I would submit that it is particularly those patients already overwhelmed by actual or imminent loss of objects, such as psychotics and near-psychotics, who have this (usually implicit) experience in the Rorschach situation. The crucial loss must be seen to be in the inner world, that is, in the capacity to experience lifelike internal representations of persons. It is his fate in the inner world and not his actual presence and availability that determines whether the object is "lost" to the patient. The neurotic or character-disordered patient probably experiences such loss little, if at all, because his hold on objects is relatively secure. Like the Boston Brahmin matron who, upon being asked where she got her hats, haughtily replied, "I have my hats," he has his objects; their existence in his inner world is stable even if their dynamic significance is not. Consequently, his subjective experience of the Rorschach situation and stimuli will be qualitatively different from the schizophrenic's: coping with fantasy, mess, initiative, impulses to look and be looked at, and the like will figure far more prominently in his response to the stimuli than coping with object loss (Schaffer, 1954, pp. 6-73). Thus, the schizophrenic's Rorschach responses and responsiveness, *including his scores* along with his content and test behavior, may be viewed as manifestations of

the type and degree of restitutive effort or restoration of objects of which he is capable at the time of testing, as well as of his tolerance for the anxiety entailed and his inner resources for this work. Ordinarily, the examiner as "object" will be vague, and sometimes even basically unrecognized as a separate being.

Loss of objects is intimately related to our particular theme, the experience of bodies. "Object" is a more comprehensive psychological term than "body," for it includes a good deal of content in the way of motivation, affect and anticipation. It is also to be noted, however, that what one says about bodies expresses a great deal about the contents of objects, doing so in the special language of wholeness, intactness, splitting or fragmentation, injury, deterioration, etc. Similarly, what one says about objects in the broader sense expresses a great deal about the state of bodies in the inner world. A therapist properly attuned to his schizophrenic patient cannot miss hearing his frequent and particular emphasis on depletion of energy, devitalization, and bodily fragmentation and disorientation in space, time and interpersonal contact. Of course, "loss of objects" is best regarded as a limiting concept, useful in defining a hypothetical ideal case. In therapy, we find all degrees of loss of objects and of restitutive efforts, and the same must be held for the experience of the Rorschach situation.

Thus, in the following discussion, it will be assumed that there is a continuous flux of actual or threatening loss of objects in the schizophrenic's inner world, accompanied by attempts to regain and revitalize objects in order to restore higher levels of organization and function. Further, a prominent expression of the loss of objects will be seen in de-differentiation of the patient's own body ego and its intermingling with internal representations of bodies in the environment. This occurs in a manner that makes it very difficult to localize and define

bodily cues, and perhaps essentially meaningless to localize them in extended time. It will also be assumed that the patient's experience of bodies corresponds to or expresses in many respects his total problem with objects on the one hand (his concerns with their contents, their stability, their motives and their availability) and with inner organization on the other (his concerns with the stability of defenses, sublimations, values, the self, etc.). Finally, it will be assumed that not just test content specifically and explicitly dwelling on boundaries and permeability, but all aspects of the Rorschach performance, including the traditionally emphasized scores, the test behavior, style of verbalization, and the other aspects of content, are pertinent to an investigation of this question.³

CASE STUDY

The following is the Rorschach record of a young man of 18. Upon initial psychiatric appraisal he appeared to be a borderline schizophrenic. He was referred for testing to help assess his suitability for admission to a small, private, open mental hospital; particular concern had been expressed regarding his capacity for impulse control. He wished to be admitted to this hospital rather than a closed hospital, and understood that the test results would play a part in the decision. He is the son of a physician and nurse which adds greatly to the significance of bodily integrity in his case; moreover, his father essentially neglected his family in favor of his practice. Also, he is the child of a mixed marriage (Catholic father and Protestant mother), which, on the identity level, must further heighten his concerns with wholeness and unity.

³ Certain aspects of response to projective test stimuli *qua* stimuli have been discussed by me elsewhere (Schafer, 1960); also, some of the TAT manifestations of bodies in schizophrenic subjective experience (Schafer, 1958b). See also my discussion of the role of normal and pathological regression in projective test responses (Schafer, 1958a).

He had been born and reared in New York City. He has an older brother and sister, a younger brother and two younger sisters. He did not complete his first year at a small college in California and told the examiner that at college he had had no major subject or career in mind: "I had a lot of aspirations once but I . . . (shrug)." His protocol is particularly rich in body language and is of interest as a model.⁴

The patient arrived ten minutes late for his first appointment during which the Rorschach test was administered. The examiner's first association on seeing him was "The Wild Boy of Aveyron" (Itard, 1932). His appearance was wild and slovenly. His hair was uncombed, shaggy and hung over his eyes. His clothes were old and torn. He wore no socks and one shoe had no tongue or lace. In posture, movement and speech he displayed the same disorderliness—mumbling, fumbling, and slumping forward most of the time. He scratched himself frequently and at one point drew a little blood. He conveyed a quality of great intensity with an element of ferocity. Equally noteworthy was the effortfulness with which he responded, as if almost all looking and thinking were strenuous and hard to keep in focus.

Card 1. Reaction time 55" Total time 2'30"

1. (Patient peers under hair hanging over his eyes.) In detail or in general? [Up to you.] It doesn't seem to resemble very much. I suppose we could, it might be three dancers, two on each side (usual side figures), one in the middle with her head back (usual middle detail). Some sort of weird ballet—not so weird but . . . That's about all. Female, three females. [Anything else?] No. . . I could go into more detail about the figures. Do you want that? [I mean any other possibilities.] From this angle? [Up to you.] √ < > (Sigh.)

Inquiry 1. [What made it look weird?]⁵

Primarily a ballet with sort of a hint of a gypsy sort of thing as compared to more classical ballet or something like that; perhaps an Indian ballet or Mexican (patient trails off into mumbling). [Gypsy?] If you try to put any apparel on them, I mean clothing, they seem not like ballet dancers; more of a Spanish feeling.

The quality "weird" stands out in this response. It refers directly to the patient's uncertain shifting between, and contaminating of, the classical ballet and the ethnic dance. Inner confusion is experienced in terms of a weird outer reality; the bodies and movements of others are experienced as unnatural. In its content the response poses, in one respect, the antithesis of the elegant existence versus the primitive, perhaps disreputable and "rock-bottom" existence. This antithesis is underscored by his saying "apparel" and then shifting to the down-to-earth "clothing." Shall he be the scum of the earth or an aristocrat? In another respect, the antithesis is between stylized, disciplined action versus exotic, voluptuous action. One can read the response on the level of conflicting social identities and on the level of clashing modes of bodily expression and differences in vigor and abandon (Erikson, 1956). Especially because it appears so early in the test, his confusion—he cannot give two distinct alternatives—indicates the body to be a significant locus for expressing fluidity of both social identity and inner vitality.

This disturbance is also evident in formal aspects of the response. On the one hand he is concerned with completing (restoring the wholeness of) the central figure, and inventively assumes the head to be thrown back out of sight. In so doing he indicates noteworthy synthesizing interest and capacity (Prelinger, 1958). On the other hand he splits the concept of the dancers into their bodies and their clothing, indicating thereby a break-

⁴ See also my analysis of body experience in the Rorschach record of an hysterical woman (Schaffer, 1960).

⁵ The method of test administration followed has been described by Rapaport *et al.*

(1946); it includes inquiring after the patient completes each card, and, except for establishing locations, inquiring with the blot out of sight.

down of synthesizing capacity; this may be said because we usually encounter automatic blending of these figures with their clothing. The dynamics of this split are likely to include exhibitionistic-voyeuristic interests; note in this regard his choice of words—"if you try to put any apparel on them"—with its intimation of nakedness. Again, however, we may shift our level of analysis and see in this perceptual splitting and its suggestive wording the uncivilized representation of the body and the implied resistance to be overcome in civilizing it, or, in other words, a savage identity fragment reminiscent of the ethnic emphasis in the response content. His mumbling, his physical appearance, and his stripping off of clothing during the test, as noted below, are obviously pertinent to the themes here formulated.

Card II. Reaction time 2'15" Total time 3'20"

1. (Sigh) . . . ^ . . . v . . . < . . . > ^ . . . Do I have to find something for each one or . . . ? [No, but give it a chance.] . . . [Have you thought of any possibilities?] No, none . . . (Patient's eyes almost covered by his hand as he seems to try to limit the area under consideration in this way rather than, as is more usual, by covering parts of the ink blot with his hand.) In a way it kind of resembles a cartoon, or some sort of thing, of a couple of animals, two bears perhaps, with a red cap or some stupid thing like that! I don't know what they are doing! I can't think of anything they'd be doing in such a pose . . . with their paws together up here!

Inquiry 1. [What did you have in mind about the red caps?] Just a cap, a long cap. (Patient points out that the head would be in the white space between the upper red and the dark area.)

As on card I, and as will recur throughout the test, after first blocking and then expressing inadequacy, the patient produces a more or less vivid M. It is as if the alternatives for him are non-responsiveness in a static, empty world versus rich body experience and interaction with others.

This inferred opposition would partly parallel that between the classical ballet and the ethnic dance on card I. Continuing conflict in relation to bodies is also evident in his irritability concerning the dress and position of these figures; the confusion experienced as external weirdness on card I is now expressed in his own affective disruption. Also, this response is sapped of its inherent vitality by his seeing it only as a cartoon and as animals in human-like movement. His previous M clearly shows him to be capable of the easier vital M on card II, so that we may infer at this moment a falling off or ebbing of body representations in his inner world.

On a higher level of functioning, there may be defense against the suggestion of sexual or aggressive interaction that, empirically, appear to be inherent in this visual gestalt. On a regressed level, there may be archaic anxiety concerning human contact of any sort, perhaps embodied here in the "paws together" that he cannot cope with. I would emphasize the latter inference, partly on the basis of the entire foregoing analysis, but most of all on the basis of his expressive movement of covering his field of vision close to his eyes. This action seems to express how oriented he is toward the inner world and transformations therein, and how little he undertakes active, adaptive physical manipulation of the environment, such as covering parts of the card with his hand as many subjects do. Thus, in the setting of an abstracting difficulty, he transforms his body rather than the object, and only then can he sort out details and focus well enough to respond.⁶

Card III. Reaction time 3'15" Total time 4'

1. . . . > . . . v . . . All I can think of here is an odd painting. You know, not . . . an actual thing but an odd version of two Negro women, say, with very odd-shaped bodies and . . . holding something,

⁶ Compare Rapaport (1957, especially pp 181-193) on other, related aspects of such disruptions in the response process.

some sort of scepter or some kind of thing (the dark areas, seen upside down, the scepter being the lower leg of the popular response).

Inquiry 1. [What did you have in mind by the odd shape?] They were very deformed, that's all. [In what way?] (At this point patient takes off his sweater exposing a torn sport shirt with only one button and a good deal of his torso.) In what way? Her mid-section was . . . just sort of squeezed down and went out laterally (reference to lower back of popular figure). Everything was just sort of as if they had brought something down on their head, and their neck was broken, and her legs were all squeezed into one hunk (legs are upper torso and head and neck of popular). [What suggested a painting?] Because it looked hardly natural. [Anything else?] No, merely their forms together. [Negro?] Their hair and shape of their faces. [Anything else?] The profile of the face mostly and the appearance of the hair. [What about the hair?] It appeared to be rather short and for some reason it looked like it could be curly and yet they didn't look like men.

This M is of poor form quality in essential respects. Initially he describes this quality as "odd-shaped." In doing so, he is in one respect taking critical distance from his response, while in another he is experiencing as external an internal difficulty of integration. When he goes on to describe the figure as squeezed, broken and compressed into partial amorphousness, he continues his efforts to test external reality and work out adequate syntheses of apparently external properties; however, these adaptive efforts are altogether dominated by obviously implied fantasies of violent persecution of M minus, confabulation, and bizarrely morbid content leaves no doubt that bodily experience of delusional and/or hallucinatory quality is familiar to him, at least in its transitional or borderline forms. In particular, his saying "they had brought something down" suggests the presence of ideas concerning external persecutors. In final analysis, however, this may all be body language expressing regres-

sive experiences of splitting and fusing in many respects; and very possibly the destructive content introduced may show how he tries to fill in and make sense of the experience of inability to cathect his body and its interpersonal contents as a differentiated whole. Yet, a crippled body — a fragmented ego—remains: it is the one that can say, "I can think," "I can't think," "It resembles," and later, "Every way I looked at it," etc.

It must also be noted that he sees the figures as female, and that, during the inquiry into the hair texture, he indicates that it has been a problem for him to make this sexual differentiation; also, that there is particular emphasis on the area that would be a protruding abdomen on the woman. Considered together, these items hint at bizarre, frightening fantasies concerning pregnancy in the mother and, through the patient's implied feminine identification, in himself. More evidence will be needed, however, to establish this theme. In any case, the woman-self is violated in this response at the same time as, in striking contrast, ruling power is ascribed to her through the scepter (see also card IX). And again, he introduces an ethnic emphasis with low caste and vigorous connotations.

Card IV. Reaction time 4' Total time 4'50"

1. . . . \vee . . . $< \wedge$. . . This doesn't look like very much. [Any possibilities?] No. Once again it sort of resembles feet, these (lower side details) and it looks as if it could sort of be a person (W) bending way over and his head is between his legs (head is lower middle detail facing the viewer).

Inquiry 1. [Did anything beside the head make it look bent over?] The form of what was there; you saw his legs going up to here and his head between his legs. [?] No.

The application of levels of analysis is clearly exemplified in the understanding of this delayed, vivid, and distorted M. Obviously, the position implies an anal-homosexual presentation of the body; this implication is contin-

uous with that of feminine identification on card III. If, however, we shift our vantage point to that of regressed ego experience, we observe that this figure is seeing the world backwards and upside down; in addition, in consequence of its contorted organization, it cannot safely be said to be either coming or going. All this despite the fact that it is comparatively easy and common for subjects to see the blot as an erect figure approaching or moving away, or as an extended figure lying down. In this instance, a subjective sense of disorientation in space and life appears to be expressed. The patient's long delays throughout the test before responding with M's, the mixed plus and minus form quality in these M's, and his odd way of covering his field of vision close to his eyes, may all be seen as manifestations in time and motion of this disorientation and of his difficulties in achieving orientation.

Card V. Reaction time 1'55" Total time 2'40"

1. . . . It could be a bird lighting on the water (left half of blot) and this could be its image (right half). A big-billed bird . . . and large winged . . . a large bird! [Anything else?] No. Every way I look at it it reminds me of a bird in one form or another. (The bill is one half of lower middle projection.)

With all its intense and delicately poised motility, this response also reflects both splitting of the body and fusion of bodies. With regard to splitting, the bird's largeness evolves from fragmented impressions of the bill first and then the wings; only afterwards, with an air of discovery, is the bird's size achieved. (There is naive realism or concreteness of thought in the "large" concept, as well as indication that size is an especially important component of body experience.) On card IV there was a similar (Dolike) progression from the legs to the whole figure. As Rapaport *et al.* have pointed out (1946), it is warranted to assume that the normal response often evolves in just this way, but

with the important difference that its development usually goes on silently, easily and almost automatically in most instances, so that only the final synthesis appears in consciousness and does so quickly. In contrast, synthesis is here typically a late, labored and uncertain accomplishment. Splitting is also suggested by the non-attainment of the popular winged creature on this card: the dividing midline of the ink blot dominates the response process, and only in the concept of reflection is the ordinarily easy synthesis of the entire ink blot accomplished. (This delayed, secondary synthesis is attained on card VI in the same way; there too he does not attain the popular response.) From a formal point of view, reflections are adequate syntheses only if they are accompanied by evidence of capacity to subdue the midline and accomplish single-bodied integrations of the blots as well.

Of course, the midline is a region of contact as well as a divider. In the present response, reflecting the patient's increasing efforts to re-synthesize what has been split, that is, to make restitution to higher levels of organization, the midline appears as a region of self-contact through the outside world, in the same sense as any mirror might be for a person whose inner world does not include a steadily-felt, bounded and articulated body ego. Perhaps this patient's saying "image" rather than "reflection" hints at just this process of trying to find an image of himself through reflections from the outer world.⁷ In some records the midline as divider is bizarrely accounted for by notions of bodies literally being split or torn in half.

With regard to fusing of bodies, once the bird is recorded in his experience it contaminates his perception

⁷ We may venture this far not on the strength of this response alone but only in the interest of following through a point of view about responses and with the caution of doing so with careful attention to the context of the total record; the same is true for all aspects of the analysis of this record.

of other birds: "a bird in one form or another" is for him the same as the first bird. It is not that it looks like the same bird from any position of the card. In this instance, one body is also several.

Card VI. Reaction time 1'45" Total time 2'15"

1. < . . . ^ . . . < . . . This, I suppose . . . ^ . . . < . . . This could be some sort of raft with some men on it, a few men, four or five. This one could be pointing and this one is just standing in despair and the rest of them are probably sick.

Inquiry 1. (Patient is asked to show the edge of the raft.) I don't know. [What did you have in mind?] Around here (vaguely indicates the length of the midline of the large lower detail) and this were perhaps land or something (upper detail). (Patient points out that the upper side projection of the large lower detail is the hand of the pointing figure and the small bump further down the outside edge is his head; the despairing figure is the lower side projection facing toward the top of the card "with his head down"; the rest of the figures are vague, the patient uncertainly pointing out the small projection below the lower side projection as the head and arm of another figure.) [What made you say they were probably sick?] The overall look of everyone: the man standing looked rather ill or . . . sort of . . . suggests . . . they all seem sort of . . . without life; they appear to be lying down or ready to slump down, everyone was lying down except this one who was sitting down (lower side projection) and he looks ready to fall down.

This response is a stunning illustration of the main thesis of this paper. With almost disorienting effect, it encompasses undifferentiated, disproportionate and blended bodies. Its end result is a confabulated jumble of humanity. And it is dying humanity—diseased, precariously upright or fallen, sapped of vitality and dead. The raft image itself suggests drifting in an uncharted area with no connection to larger, secure, sustaining bodies, such as land or ship. Note in the formal aspects of this response how even the boundaries of the raft are uncertain, not to speak of the boundaries of the

separate bodies aboard it. These then are the fast-fading survivors of a wreck. The reference to land, and, by implication, the pointing to this land, while signs of hopefulness, are pathetic, for the land in question is disproportionately small and spiky in contour; furthermore, it is mentioned only during the inquiry and then it was stimulated by the examiner's need to define the boundaries of the raft and not by the patient's inner processes. What is more hopeful about this response is the patient's sensitive attention to postural expressiveness: he has already indicated this asset, for example in the bird lighting on the water on card V. It must be recognized, however, that this asset, with all its empathic potential, is mostly in the service of sensing and communicating disorientation, decomposition and death. Such is his world. Intensified but morbidly narrowed empathy of this sort is often seen in schizophrenic functioning. We may well wonder too if this young man is not signalling fearful anticipation of further, extreme regression, of being, "ready to fall down," and manifesting his readiness to grasp at any straw, any little bit of land, to prevent his drowning in regression. (A report from the closed hospital in the midwest in which he was hospitalized not long after this testing described pronounced regressive manifestations shortly after his admission.)

Card VII. Reaction time 3'30" Total time 4'

1. > ^ (Patient has been handling cards with increasing roughness. At this point his feet are out of his shoes and, since he is wearing no socks, it can be seen that they are filthy.) . . . ^ . . . v . . . < . . . > . . . These just look like, yes, like . . . maybe these are just faces, one on top of another. . .

Inquiry 1. (Patient points out popular face in upper third, a vague face on the inner edge of the middle third, and the clear face on the upper outer edge of the lower third. He characterizes the first two as "Negro" and points out their hair, and the lower-most face as "Indian.") [Negro?]

Their features. [Anything else?] No. [What did you have in mind when you said "one on top of another"?] Just the way they were represented there, as if they were just one drawn on top of the other: three of them, no bodies, placed one on top of the other.

That there are no bodies, only faces, seen here, especially when he sees the profile of the popular figure and does not even make out the relatively easy and common complete head or head plus torso, further indicates the splitting of bodies in his inner experience. (These may be the disembodied faces he feels he presents to the world — what we, on our own levels of organization, often carelessly call "fronts.") The response also underscores the come-and-go nature of his experience of bodies, for in review we see how he experienced them strongly on card I, uncertainly on card II, passively on card III (where he also missed the easiest M of all), topsy-turvy on card IV, strongly on card V, and jumbled and fallen on card VI; and now we have a precariously balanced, meaninglessly thrown together heap of faces. It is also instructive to note in review of card III-VII how much the direction of movement of his bodies is explicitly or implicitly downward: the downward force, the head down, the lighting on the water, the falling, and the implicitly tottering heap. His rough card handling is especially evident to the examiner at this point, very likely as his reaction to the accumulating, anxiety-arousing plastic representations of downward, regressive, experience; perhaps the terrible impact of card VI is most important in this respect.

His Negro and Indian references are reminiscent of the gypsy, Indian, Mexican figures on card I and the Negro women on card III. The former body vitality and the ruling power are now gone, however, like the vanishing Indian.

Card VIII. Reaction Time 2' Total time 2'30"

1. < . . . ^ I don't see anything in that.

This looks like an animal . . . a body and four . . . just a quadruped (stumbles over this word), along the line of a bear maybe or . . .

Inquiry [Did you have something more in mind?] No.

It is surprising that he now virtually escapes from his dismal world of bodies. If nothing else, he could easily have seen the animals hanging on or falling or being pushed down by the upper gray-green extensions. Other patients with similar problems often do so. It seems that he has momentarily regained an adequate level of integration and is successfully warding off his inner world with the help of the area in question, for of all the ink blot areas in the test this is the one most nearly pictorial in quality, in addition to being almost completely separated from the rest of the ink blot. In these respects it poses no special problem of splitting or fusing bodies. But be that as it may, we must still note a speech disruption when he tries to elevate himself, i.e. his language usage, from "animal" to "quadruped." (See card I for a similar change of wording.)

Card IX. Reaction time 50" Total time 1'25"

1. . . . √ . . . This is like looking through some kind of painted door and there is a woman in a dress, more like a robe, a regal-looking woman. The person is very close to the door looking through. can see her coming toward . . .

Inquiry 1. (Patient points out the entire colored area as the door and while doing so refers to it as "painted flowers." The woman is the middle space with the head vaguely indicated in the center of the lower red; the arms are seen between the middle space and the lower red, in the brownish area.) [Did you mean it looked like painted flowers?] No, it had flower-like colors; it was painted with flower-like colors. [Regal-looking?] She just seemed to let's say, stately looking, partly because of her dress and her posture, the way she carried herself, a superior kind of feeling, a self-confident one.

The visual position of the observer described in this response corresponds

in a crucial respect to the one he expressed through his own body on card II. Then he covered his field of vision close to his eyes in order to define a figure; now he introduces into the response content an obstruction close to the eyes—the door—again defining a figure thereby. It is as if he must narrow down his field of vision to have a definable experience. It is a way to focus, to counteract perceptions that are fluid, without contour and articulation. In this respect it is a process of structuralization to remedy a defect, the defect being closely linked with intrusions of the primary process. It may be, however, that he is expressing a different though related experience, that of having to see around himself or his body periphery as around a physical obstruction like his hair. His body ego in this case would be shrunken within his depersonalized physical frame.

In this case, as on card III, it is a ruling woman who is discovered. This time however, it is an idealized figure and one who is approaching. In the context of his schizophrenic disturbance in ego experience and object relations, we may infer that perhaps he is expressing a wish for a strong maternal figure with whom enlivening contact may be possible, and, as the necessary counterpart to that, a wish for a regal self capable of inner confidence and the bodily vitality that goes with it. That this response content can be read as expressing noteworthy voyeuristic interest is obvious, but by attending to the archaic ego experience implied we gain the advantage of recognizing provisionally the significant growth-need aspects of his voyeuristic interest. That is to say, to see and to be recognized, in the sense here discussed, is to live. However negative in form, his dramatic flair for motion, dress and undress compels his being seen and felt; he fills the room the way a great dramatic star fills the stage. The response is another hopeful sign in a mostly bleak record.

Yet, even this response has its share

of schizophrenic hopelessness and confusion. It is not just that the woman's head is vaguely and arbitrarily seen, thereby impairing the full-bodied potential of the image. More important is his essentially artificial use of color. He could not attain "a flower" or "flowers" on this card, those not infrequent uses of color that could bespeak vitality of emotional and sensory experience. For him it is only paint on a doorway, a put-on thing without fragrance, soft texture, and fecundity. He approaches a "flower" response in his transient contamination, that is, in his reference to "painted flowers," though, of course, even that image is still at a significant distance from real flowers. Thus, at best, the warmth and feel are on the door and neither in the observer nor the woman, and we find, in his inability to use color freely and substantially, a formal Rorschach counterpart of the devitalization of his world. This congruence enables us to proceed with the basic theme so far developed with added confidence.

Card X. Reaction time 4' Total time 5'

1. $\langle V \dots \wedge \rangle \wedge \dots \langle V \dots \langle V \dots \rangle$
(Patient looks at back of card.) . . . These look like animals, animals of the sea, many of them, some with the characteristics of people, sort of. . .

2. This looks like a paperboy (lower outer orange).

Inquiry 2. [What made it look like that?] I don't know, it just looks like what people think paperboys look like. [Try to describe it.] No, just like a little boy, not too little, with a hat on (patient mumbles) . . . (Patient points out a peaked cap and a vague face on the lower outer edge.)

Inquiry 1. [Did you make out any specific animals?] I remember a turtle (side gray); it looked like it was very fatigued. And it seems I remember a couple of crabs somewhere (upper gray) . . . [Did you make out any others?] . . . I can't remember. [What did you have in mind about the characteristics of people?] Just like, they didn't walk like animals but the way people do, one when tired and the other just in a very careless way; they seem to be lying down in a human kind of way

(the crabs). (While the patient points out locations he adds the following:) And these are seahorses up here (lower green) and this (side blue) is something. I don't remember what, it looks like something, maybe something like . . . some kind of a . . . sort of a spider crab kind of thing and yet like kind of human too. Maybe they have polio or something. [Polio?] It just looks like it. [How?] The legs and everything seem to be . . . they just don't seem natural and yet they seem as if they are all there and yet warped or bent or something. [Kind of human?] In that way. [What made them look like seahorses?] They . . . seahorses look like something and that resembles what this something is: it just resembles a seahorse. [Can you say what the quality is?] No, just the body, the shape. [What made the turtle look fatigued?] The way its arms and legs were. [What made it look like a turtle?] The body form, shape. [Anything else?] No. [What made the other ones look like they were lying down?] The position of the arms and legs, a very unusual crab. (Patient points out the usual legs on the upper gray as arms and the usual antennae-like projections as legs.)

In the inquiry into the "paperboy," and later, into the "seahorse," the patient is unable to define his own perceptual experience directly. In the former instance he can do so only through the experience of others ("what people think paperboys look like"). In the latter instance the boundaries between inner processes and outer objects is lost ("that resembles what this something is"). And in both instances he is annoyed with the examiner. The annoyance accounts, however, only for the place of occurrence or expression of these ego failures and not for their quality, for obviously there are many ways to feel and express annoyance without such drastic decline of one's ego level. A related disturbance occurs during the inquiry, just before he establishes the spider crab response: even while looking at the area in question, his response is momentarily unavailable to him except as a memory—"This is something, I don't remember what . . ." The implied impairment of the ego's

recognition function also reflects the split between what he sees outside and what he makes of it—or has made of it—inside.⁸

Returning to the paperboy, three additional aspects of this response are noteworthy. First, in switching from "little" to "not too little" he again indicates sensitivity to body size (see card V). At the same time he flounders in concreteness. Second, a paperboy is one of our "All-American boy" or Horatio Alger stereotypes, and may express a preadolescent, conventional, self-reliant, enterprising identity fragment (Erikson 1956). Like some previous responses, this is another slight sign of hope. At this time, however, we see in the patient's clothing, in his body movements, in this response's poor form elements, and, most of all, in his test responses in general the virtual unavailability of this identity fragment for genuine development or employment. Third, in this total content, "paperboy" may also be read as a pun, that is, a boy of paper, not of flesh and bone, that is, a lifeless imitation. This inference would correspond to the fact that the "All-American boy" stereotype, such as we find on slick magazine covers, has itself become a common model for a slick cover over human confusion, anxiety, passion and emptiness.

The large scale drama on card X lies, however, in the contamination of human and animal qualities, and in particular, in its development in terms of fatigue and lying down, and, finally, in terms of polio. He introduces increasingly severe, deadening disruptions of body integrity and vitality. In the spider crab with polio we see a threatening creature immobilized, its biting and tearing parts crippled. Spider crab, like octopus and spider, has malevolent maternal connotations. In line with the theme of this paper, it would appear closest to the quality of schizophrenic experience to regard this

⁸ Rapaport (1957) has clarified the altered states of consciousness such responses imply.

	Scores ^a				Summary of Scores			
	W	M	FC	H	R	12		
I	W	M+	FC+	H	(P)	Average Reaction Time	2'35"	
II	W	FM ^b		A		Average Total Time	3'15"	
III	W	M±		H		W	9	(75%)
IV	W	M±		H		D	2	(17%)
V	W	F+		A		S	1	(8%)
VI	W	M±		H,N		sum M/	sum C	6/0-1
VII	W	F±		Hd	(P)	F% ^c	33/100	
VIII	D	F+		A	P	F+ % ^d	50/50	
IX	1. S	M±		H		A %	33	
X	2. W	F/C-		Arch		H %	58/67	
	1. W	FM±		A,H	(P)	P %	8/33	
	2. D	F±		Hd				

^aSee Rapaport *et al.* (1946) for criteria and rationale of scoring.

^bFM is used for weak M or animals in human-like movement, and counts .5 in sum M; it is not used for animal movement.

^cThe numerator is $\frac{\text{all } F}{R} \times 100$; the denominator is

$\frac{\text{all responses scored for form level}}{R} \times 100$, that is, the % of responses with strong form components.

^dThe numerator is $\frac{F+}{\text{all } F} \times 100$; the denominator is

$\frac{\text{all responses scored } +, \pm}{\text{all responses scored for form level}} \times 100$; the latter is the more significant measure.

as an aspect of the way he sees and experiences bodies, his own in relation to the mother's and the mother's in relation to his, or, put in the most consistent way, the two of them in an undifferentiated, "warped" unity.

Turning now to the summary of scores, we find an abundance of human movement impressions. This is especially striking in the setting of a comparatively low R. Relatively many of these M's are more or less poor in form quality. Juxtaposed to these data is a virtual absence of color responses. Although he gives two FC responses, indicating efforts toward controlled emotional contact with others, he is disturbed by the redness of the hat on card II and refers only to *painted* on colors on card IX. The quantitative and qualitative poverty of emotional experience expressed in the color scores is a formal indication of what is inferrable from the disrupted form and content of his M's that is, from the distortion, fusing, fatigue, loss of vitality, falling over, etc. Thus, these various aspects of the movement-color distribution suggest general impoverishment and distortion of the body ego

and a trend toward regressed body experience. The quantitative and qualitative aspects of M and C also indicate, of course, the extent of his immersion in his inner world of fantasy and delusion, and they imply the predominance of introjective and projective mechanisms in his functioning with but little note being taken of the outer world *recognized as such*. More than likely, what he can usually recognize of the outer world are fragments of it encountered as inner reverberations, though even these he may notice only upon re-projection into the outer world. His generally low form level further indicates severe impairment of reality testing. His related limitation of interest in conventional reality is indicated by his producing only one solid popular response, though he comes close to a few more.

Yet it is particularly noteworthy what a large percentage of his responses pertains to human content or to animals with human-like qualities. This indicates the retention of a very lively interest in human experience. His other scores indicate, however, that this experience is regressively

conceived for the most part and dulled by the devitalizing aspect of his regression. In the intensive therapy of schizophrenics, it is commonly observed that they have by no means lost their interest in human affairs. It is a question of the level on which they carry on and express this interest, of the predominance of primary processes in this inner world, and of the depletion of psychic energy available for sustained interest and restitution. Only in a limited sense, therefore, may we speak in this case of a turning away from the environment or from relationships.

It is also not to be thought that his scores show him to be incapable of emotional discharges onto the environment. In general Rorschach analysis, the virtual absence of any determinant other than form expresses a major effort rather than secure accomplishment, or else a major impairment rather than a total loss. Also, this patient's dramatic appearance and test behavior speak against total withdrawal. In the context of a couple of very weak FC and the absence of substantial color responses, the likelihood is that tenuous adaptive efforts and non-responsiveness will be sporadically disrupted by intense discharges. This conclusion would hold for a neurotic patient too, but is particularly likely in this case in view of the indicated regression to primitive levels of ego organization; on these levels the capacity for delay through defense or ego control is greatly diminished. Thus, as regards subjective experience of his own body, we might expect brief moments of intense vitality, or at least brief moments of intense activity as a restitutive measure through which he is seeking to find his energy or deny its loss.

The very high W% points to extreme synthesizing efforts, and, in context, to megalomaniac propensities. The latter would be the counterpart to the persecution ideas suggested in the content (card III). Yet, consid-

ering the slow and effortful manner in which he ground out his responses, it would appear that he even has difficulty keeping in touch with processes and contents in his inner world. And the relative speed with which he gives up each card after giving one response indicates either how little comfort he experiences in the process or how quickly he may become depleted in the process of trying, or both.

The internal consistency of the protocol in *all its aspects* allows us to accept it as valid and representative of the patient, and not artificially slanted or exaggerated in order to influence the decision as to hospitalization. In any case, we are in no position to assume that he was of one mind in wanting to get into an open hospital. Only in intensive therapy might it be learned how he saw his test performance in relation to the question of disposition, and how, if at all, he *tried* to slant it.

In summary of this analysis, this patient's subjective experience of bodies appears to emphasize the following themes: as regards their *direction*, they are seen primarily as moving downward and possibly turned upside down or backwards as well; as regards their *differentiation*, they merge with each other and become amorphous in their inner detail; as regards their *stability* they are precarious, and either about to fall or fallen; as regards their *vitality*, they are weak, sick, tired, crippled and dying, although in an uncertain and not sustainable fashion their size, vigor, integrity and dignity may also be experienced; as regards their *relationships to the environment and to each other*, they are isolated, drifting, disoriented, obstructed, merged into a jumble of humanity or else grandiose and/or persecuted by crushing forces. As regards *subjective awareness* itself, it is blocked, fragmented, sometimes inaccessible, and may require for its definition radical transformations of his self and body ego or discernment of these through projection into the

experience of others. The trend of experience is steadily regressive. There is marked de-differentiation within the body ego and loss of boundaries of his body ego in relation to others. There is continuing emphasis on depletion, disease and destruction. The same conclusions are suggested by the slow, labored, artificial, distorted, fragmented, arbitrarily and expansively synthesized, and relatively colorless formal aspects of his record. In the end, we can be only astonished at this instrument, the Rorschach Test which can stimulate and support a very sick young man to expose the horrors in his mind with so little evident pain.

SUMMARY

I have presented formulations concerning the schizophrenic's disturbance of body ego and its relation to his loss of objects in the inner world, and have illustrated with a case study how these phenomena seem to appear in the Rorschach record. I have made special use of three general principles of test analysis. The first is that of pursuing a compelling hypothesis exhaustively, emphatically exploring every aspect of every response for pertinent implications, and seeing what total picture ultimately emerges. In this regard, I believe that, as with any data, what Rorschach data tell us depends on what questions we put to them. The second principle of analysis is that of seeking convergence and patterning of implications of test scores, content, behavior and mode of verbalization, without being partial to any one type of data. These are all vital materials for building a test report. The third principle is that of interpreting these data as being significant on more than one level of organization of functioning. This is especially important in dealing with schizophrenic material because from one response to the next we commonly encounter flux in level of functioning as well as multi-level significance within the single

communications. With the help of these principles, the examiner may discover whole worlds of subjective experience expressed in Rorschach results. In the present context, the world considered has been that of unstably bounded, poorly differentiated and integrated bodies, or, more concretely, bodies which repeatedly split, inflate, get crushed or crippled, die, or get lost in each other or in undefined and topsy-turvy space.

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The Use of the Rorschach in the Study of Personality and Occupations¹

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In the last four years there have appeared several overlapping surveys of the literature on psychology and occupations, which have covered the field quite effectively: Molish's (1956) review of the Rorschach in the military situation; Roe's *Psychology of Occupations* (1956); two chapters in *Developments in the Rorschach Technique*, by Williams and Kellman (1956) and by Snowden (1956); and Patterson's (1957) review of the use of projective tests in vocational counseling.

Molish found the results of large scale Rorschach techniques as applied to the selection and screening of military populations to be rather unsatisfactory. He went on to give a thoughtful discussion of some of the problems entering into the use of the Rorschach under such circumstances, pointing out that not all of the difficulties encountered are primarily attributable to the method.

The Williams and Kellman chapter on the use of the Rorschach in industrial psychology is a quite comprehensive review of industrial and vocational applications of the Rorschach. Patterson's later review included a number of references which did not fall within the purview of Williams and Kellman. Between the two, however, the research literature in the field is well covered and there would be little point to our producing a review of these papers. We would suggest that anyone interested in the general field read both of these papers, since Williams and Kellman are thoroughly convinced of the utility of the Rorschach and Patterson is not. A search of the literature has not turned up any articles not covered in these

reports which would change their intent although a few papers omitted in the reviews are listed in our bibliography for the convenience of others interested in the field (Brosin, 1948; Dörken, 1954; Dulsky & Krout, 1950; Wilkinson & Jacobs, 1954; Yerbury et al, 1951). The few papers which have appeared since these reviews will be discussed below. First, however, we would like to mention a relatively new development, concerning which there are an increasing number of papers, but as yet none that can justly be termed research reports.

This is the use of the Rorschach and other projective techniques in the industrial setting in what is usually called "executive appraisal." The chapter by Snowden (1956) in *Developments in the Rorschach Technique* is entitled "Top Management and the Rorschach Technique" and it is a general discussion of the utility of the Rorschach in the evaluation of executive posts, and the selection of an individual to fill a particular one. This is typical of such papers in that no evidence of any sort is adduced; it is atypical in that it does not contain any "case studies." Papers containing such case studies are equally exasperating, however, as a typical example will show:

A cost accountant was promoted to the position of methods engineer on the basis of his high creative talents as indicated by the Rorschach and on the basis of his mechanical aptitude and interest as indicated by the other tests. This man proved himself so well adapted to this field that he was promoted to chief engineer within a year (Brown, 1948, p. 435).

What are the Rorschach indications of creative talent in engineering? Was he promoted only because of the Rorschach discovery of these, or had he given some intimations of them in

¹ This paper is largely based upon an unpublished paper by Mierzwa, entitled *The Rorschach test: Its potential in the study of Career Development* (1959).

his previous work? What part did the high mechanical aptitude and interest play in his promotion? Etc., etc., etc.

Such use of the Rorschach and other techniques may, indeed, be very effective. Our objection is to the lack of evidence, or to the withholding of it, if it has been obtained. Full clinical reports of the interaction of personality factors and various aspects of work could be of the greatest aid in further development of an adequate psychology of occupations. It must be admitted that the technical Rorschach literature also contains occasional frustrating references to the application of Rorschach variables in work settings (e.g. "It would be hard to be a good private secretary, a public accountant, a mechanic checking up on machines, even a diligent and good student, without the little *d*." (Piotrowski, 1957, p. 93), also without research evidence. It should, however, be pointed out that apparently in the situation of "executive appraisal" that is competently done, great care is taken to investigate not only the individual under consideration but also the precise nature of the job, and the personalities of the men with whom he will be associated. This is an important emphasis, as was brought out by Stern, Stein, and Bloom (1956), and one which has not been sufficiently regarded in many studies.

We turn now to a discussion of the very few studies which have appeared in the last three years.² Abel, Oppen-

² A new test known as the S-O (Structured-Objective) Rorschach Test has recently been developed by Stone (1958). It uses standard Rorschach blots, with ten groups of triads of responses offered for each blot. It is not intended for clinical use, but is specifically designed to provide personnel workers with information about the temperament of the person being studied. Administration, scoring, and interpretation require no special training. Norms are given for an adult sample of 8061 including students, professional, semi-professional, mechanical, crafts, sales, and office workers. The norms are for W, D, Dd, S, F, F-, M, FM, FC, CF, Fch, A, H, P, and O. It will be interesting to watch for research reports with this instrument.

heim, and Sager (1956) used the Rorschach with students applying for, and in, training in psychoanalytically oriented psychotherapy. There were 86 applicants, whose potential was separately estimated by an interviewer, and by use of the Rorschach. Agreement of the two estimates was very high, as can be seen from Table I.

TABLE I. Relationship Between Interview and Rorschach Evaluations of Therapeutic Potential

Rorschach Evaluations	Interview Evaluations		
	Accepted	Rejected	Total
Desirable	28	9	37
Moderately Desirable	15	9	24
Poor	6	19	25
	49	37	86

Chi square=16.5 and is significant beyond .001 level

This alone does not tell us very much about the validity of either technique, nor the relative cost in terms of time involved. Of the candidates who entered training, 31 were evaluated for therapeutic proficiency when they were advanced students or graduates. They were independently classified by two of the authors into three categories. These evaluations were based on supervisors' reports and personal contacts, and the criteria included theoretical and diagnostic knowledge; outcome of case load; technical ability; and such "personality factors" as completion of analysis and competence at handling own problems. These evaluations were then checked against the initial Rorschach evaluations, producing Table II. Clearly the Rorschach

TABLE II. Relationship Between Proficiency and Rorschach Evaluations of Student Therapists

Rorschach Evaluations	Proficiency Evaluations			
	Excellent	Good	Fair	Total
Desirable	5	10	3	18
Moderately Desirable	3	3	3	9
Poor	0	4	0	4
	8	17	6	31

did not predict. Unfortunately we do not have comparable data on predictions from the interviews; of course, since all of these candidates were accepted, the interview prediction was that they would become at least good therapists. Nor are there any data on those who were rejected on the basis of the interview, some of whom might have succeeded in getting into training elsewhere. The authors do discuss some of the criterion problems involved, both in admission of candidates and in evaluation of their performance, but this study is particularly instructive for the way in which it exemplifies the major difficulties in all studies of this sort. Quite apart from crucial criterion problems, the lack of full explication of the way in which the Rorschach data are used to arrive at a judgment, which makes it impossible to replicate the study, and the very general and usually disregarded problem of rejected cases, are clearly seen. Reports such as this do not help us much.

The painfully detailed, intensive, and sophisticated study of this same general problem which was carried on at the Menninger Foundation over a ten year period has now been published (Holt & Luborsky, 1958). It seems fair to say that the major result is the demonstration of just how complex the selection problem is, and how inadequate our techniques still are. Inadequate still, but not without promise. The Rorschach itself played a relatively minor part in the whole procedure. The Manual for use of the Rorschach developed on the project was less successful than that for the TAT and some other techniques, although Holt & Luborsky felt that further study might eventually yield more efficient cues. At the same time they reported that using relatively objective test scores from the Strong, Rorschach and Wechsler-Bellevue in a multiple correlation technique resulted in less validity than clinical evaluation of a battery in which the last two were the principal instru-

ments. They also reported that:

We did not discover any brief battery of procedures that was better than the one used by the Admissions Committee's tester, but we did establish that a single projective test was *not* adequate for this kind of prediction. Even though the Rorschach or TAT cannot be used alone, they probably do contribute usefully in the context of a rounded body of data. Psychiatric residents can be selected fairly well by a single interview, but it is difficult to choose the unusual interviewer who is able to it (Holt & Luborsky, 1958, p. 215).

This last comment suggests that it might in the end be more fruitful to search for effective interviewers and then study them, than spend so much time on tests. We would like to support strongly such research. In the same vein, it must be remembered that clinicians have varied greatly in their performance in these various studies, and a few have been quite effective. It is suggested that clinicians of demonstrated proficiency are worthy objects of study.

Some of the difficulties with use of the Rorschach for selection are well exemplified in this comment:

The Rorschach test can often tell a good deal about emotional control through the way the subject responds to color and integrates it into his responses, though on this point we should like to warn that a great variety of patterns of response to color were found in the Rorschachs of adequate residents. A total absence of color responses, even weak or possible ones, was very rare among them, however, although not uncommon among inadequate residents. Other Rorschach signs characterizing inadequates were: a complete absence of FC responses; the presence of C' responses, especially if there were two or more pure C'; failure to give any response at all to brightly colored cards or marked delay followed by poor responses; and color-naming rather than real responses. These are all rather extreme and unusual reactions, but any of the more familiar types of response were found just as often among acceptable as among unacceptable applicants (*Italics supplied*). (Holt & Luborsky, 1958, p. 321).

Symonds and Dudek (1956) report

unusual success in the use of the Rorschach for predicting teacher effectiveness. Data for 19 teachers included interviews, classroom observation and supervision, TAT, and Rorschach. Symonds ranked the subjects for teacher effectiveness on the basis of his knowledge of the teachers through interviews, observation and supervision; Dudek ranked them on the basis of blind analysis of the Rorschach. The correlation between the two rankings was .60. It is unfortunate that the criteria used by Symonds and Dudek in their ranking are not fully reported since replication of this study is highly desirable.

A paper by Shah (1957) reports that Inspection Technique Rorschach scores did not distinguish between missionaries who were categorized seven years later as successful (i.e. remaining in the field) or failures (i.e. having left the field spontaneously or by request). There were 156 successful and 50 unsuccessful in the group. An analysis of half the sample as a validation group, showed that there were some items (not reported) which seemed to differentiate the groups adequately, but this did not stand up under cross validation with the other half. He also tried a modification of this technique and again it was not possible to predict success or failure at a significant level.

A recent paper by Mindess (1957) using Wechsler - Bellevue and Rorschach tests to predict success in nurse's training should be mentioned. Eighty subjects were interviewed and tested before entering training, of whom 68 remained for one year in training, with academic grades, ward grades, and the sum of the two (total nurse grade) utilized as criteria against which to check IQ and Rorschach Prognostic Rating Scale, which was considered to be a measure of ego-strength. Neither correlated significantly with ward grades, but IQ gave r 's of + .434 and + .457 with academic and total grade, and the Prog-

nostic Rating Scale gave r 's of + .281 and + .412 with the same grades; the two together gave a multiple R with total nurse grade of + .586. A quite serious problem in reasoning from success in training and success on the job is neatly pointed up here. It is particularly important in studies of physicians, nurses, therapists, etc. That is that actual performance in the occupation may not be (and probably is not) sufficiently closely related to grades and other training measures to make studies of students of any marked utility in this field. Here note that ward grades, which one can reasonably assume most closely represent professional performance are not related to either of the test measures used.

A recent doctoral dissertation at Harvard, by French (1959), examined occupational choice of 102 graduates 12 years after the administration of a timed Rorschach test (one minute per ink-blot). In addition to 31 Rorschach scores, he used 22 non-Rorschach variables, such as intelligence, father's income, body type, etc. Analysis of variance of the Rorschach variables for 18 occupational groups gave eight scores which differentiated at the .05 level (M, S, H, At, Obj, Pl, Cloth, and Cloud). Examining the position of the various occupational groups on each variable in the light of its traditional meaning was not fruitful. In addition, eight of the 22 non-Rorschach variables also gave differentiation at this level: Alpha number test, college grade average, endomorphy, family income, Mathematical Attainments Test, mesomorphy, reaction to stress, and Vocabulary Range Test.

Careful consideration must be given to what is done with Rorschach data once they are obtained. French's paper (1959) on prediction of career choice and some other recent studies of other aspects of career development at Harvard, suggest strongly that recourse to multiple discriminant analysis, or comparable techniques, may do a great deal to overcome the problems which

previous work has encountered in trying to utilize all Rorschach data in one series of statements. The earlier study by Anderhalter (1954) demonstrated that the linear discriminant function applied to Rorschach data resulted in satisfactory discrimination between Marine Corps officer candidates who were rejected three weeks after the screening process and candidates who received a leadership score of 90 or more, following 20 weeks of basic training. Thus, although none of the individual Rorschach variables discriminated between criterion groups, this function which can be considered a profile measure did make such discrimination possible.

In a study now in progress at Harvard, Cooley (1959) is interested in examining the process of becoming a scientist, from the fifth grade through four years beyond college. Rorschachs of 700 male students at various levels during this period have been collected as one aspect of his investigation. By utilizing a test space model, the Rorschach scores of an individual are represented by a point in an n dimensional space where n is the total number of scores. The person's unique location retains all the information originally contained in all the scores, including patterns and relationships. The test space model thus has the advantages which the "clinical" approach stresses, and in addition it makes possible reliable handling of that multiple information by use of mathematical operations rather than by "intuition." These operations allow the investigator to reduce the number of variables sufficiently to make them practically and conceptually manageable.

Multivariate analysis provides several techniques for reducing the number of dimensions, such as regression analysis, discriminant analysis, and factor analysis. (See Tiedeman, *et al.* 1951.) If personality theory suggests what occupational groups can be expected to exhibit similar behavior on a

test, then discriminant analysis can be used to reduce the complexity of the data in terms of these occupational groups. If meaningful groups are not available, then discriminant analysis is not very appropriate. Cooley (1959) has described a procedure for devising criterion groups on the basis of homogeneity with respect to the predictors being used—the Rorschach, for example. Principal component factor analysis is used to reduce the test space to allow the determination of vocational behavior common to individuals located in the same region of the reduced factor space. Rather than using classification systems developed for purposes other than prediction of group membership, it might be more fruitful to search for groups manifesting similar personality attributes as revealed by the Rorschach.

The psychology of occupations is only an aspect of the total psychology of the individual, but it is a particularly crucial one. In our culture at this time the occupation plays a central role in almost every man's life and in many women's lives; it both reflects personality and affects it; it may aid in integration or severely interfere with it; it may protect against development or expression of neurosis, or may serve as a vehicle for neurotic expression. Williams and Kellman (1956, p. 565) point out that "... vocational success depends upon personality 'liabilities' as well as assets, needs of the individual which may be legitimately satisfied by that particular vocation without interfering with success in the vocation". This does not negate the general observation that in most occupations those who are at least reasonably "well-adjusted" will be more acceptable, will get farther, will be hired sooner and fired later, etc., than the "poorly-adjusted," in a global sense. Good adjustment is not incompatible with special problems.

That there are intimate individual relationships between personality and the role the occupation plays in the

life of the individual has been found repeatedly in research studies, in therapeutic situations, and is noted in many biographies. The relationship is never a simple one, if only because each is affected by so many other variables. The relationship may be expressed in the choice of an occupation, persistence in it or change, in the degree of success or failure, or in satisfaction.

Whether or to what extent such relationships can be generalized beyond the individual is the essential problem of occupational psychology. Are there discriminable personality patterns or structures which are more closely related to some occupations than to others? Are there relationships between personality and choice of occupation different from those between personality and success in the occupation, for example? All attempts at vocational guidance or personnel selection or screening which use any personality measures assume that such relationships exist, but we are far from having anything approaching clear and replicable studies in this field. One seriously neglected aspect has been adequate development of job analyses in coordination with personality studies of selected groups. (Attention should be called to the recent tremendous research project of the U.S. Employment Service in developing estimates of worker trait requirements in conjunction with occupational analyses, which include ratings of 12 temperament factors.) Another important problem concerns the limits of the occupational sample which are most appropriate. It seems probable that study of comparative anatomists, for example, might bring greater clarity than study of biologists. (See e.g., the discussion in Super and Bachrach (1957, p. 7).)

A recent shift in emphasis in vocational research is consideration of the whole history of career development throughout the lifetime of the individual, not just of a given job for a given

person at a given time. This emphasis is best exemplified in the Career Pattern Study under Super at Teachers College, and in the Harvard Studies in Career Development under Tiedeman. The pattern of the life career of an individual may be considered in terms of a series of choice points, and one can ask whether some choice points are more affected by personality factors than others; whether and when such other factors as abilities, training, family background, etc., have more influence. Research of this sort is just beginning.

Of what value are projective techniques in general, and of the Rorschach in particular in research on the problems we have indicated? It seems fair to say that for whatever reason, neither the individual nor various forms of the Group Rorschach have proved better than other techniques for either selection or screening purposes when used alone. (Possibly profile analysis as exemplified in Anderhalter's study will improve the situation, but traditional analyses have certainly not worked.) In association with other techniques, the Rorschach has often been credited with an assist, but to what extent its contribution was either unique or indispensable is very much in question. The question is all the more important because it requires extensive time of highly trained personnel.

To our knowledge it has not been used in studies of occupational satisfaction; and career studies, in which it plays a role, are in too early a stage of development to report. Investigations of the role of personality factors in choice of occupation or of success or failure in an occupation, using the Rorschach, are exploratory or discouraging, and anyway few in number. It is, however, in exploratory studies that it has seemed to be most useful, and for which it is particularly well suited.³

³ It is particularly important, in using techniques designed to uncover pathology in research with normals to be aware of the

Even in these its use alone is rarely if ever warranted. In association with extensive life histories, and the TAT, however, it played a very important role in studies of scientists and artists (Roe, 1946, 1953), and contributed significantly to development of hypotheses about the relations between personality and occupation. Once such hypotheses have been developed, however, it is our conviction that further research will be more profitable if it is conducted with instruments more appropriate to or specifically designed for checking of the particular hypotheses. The very fact that the Rorschach has so wide a spectrum makes it less effi-

cient for focused application.

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enormous range of responses of all types which can be found among subjects who have adequate competence in living, and to be particularly alerted to the fact that many such techniques do not, as presently interpreted, give sufficient information on the adequacy and types of coping behavior available to the subject. Holt and Luborsky make this point very well:

A special word of caution may be in order regarding the Rorschach test for anyone who has not had considerable experience in giving it to intelligent persons who are not seeking treatment. An applicant often perceives the Rorschach situation as one in which he ought to let himself go as much as possible, give free-associative material, or demonstrate the liveliness of his imagination by what are essentially primary process operations in his perceptual-associative functioning. The result often bears a superficial resemblance to schizophrenic productions: There may be extensive autistic elaborations, arbitrary combinations or fusions of images, or a massing of sexual content. If the tester has any doubt, he can quickly establish the true nature of these productions by readministering the test with the instructions to leave out that kind of material; when it is truly pathological in origin, the subject cannot long exclude it from consciousness. Internal checks on the significance of such material, whether it represents pathological break-throughs or regression in the service of the ego, can be seen in the preservation of formal properties such as the accuracy of form perception, the balance of locations and determinants, or the like (Holt & Luborsky, 1958, p. 326)

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Content Diversity on the Rorschach and "Range of Interests"

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PROBLEM

One of the pieces of clinical folklore linked to the Rorschach test for many years is that the diversity of content in the test protocol would enable the prediction of "range of interests". Content diversity has also been associated with intelligence. Ainsworth & Klopfer (1954) have stated the hypothesis that A% over 50 indicates a stereotyped view of the world, further defined as an excessively narrow range of interests. They go on to say that this hypothesis may be extended to include an over-emphasis on other content categories.

Beck (1945) has pointed out that breadth of associational content varies directly as functioning intelligence and is an index not only of potential but also of the degree of its actual development through cultural influence. He specifies that the fewer the content categories the less the intellectual efficiency of the individual. He also has specified A% as being an index of stereotypy.

In the present study an attempt has been made to utilize an operational measure of range of interests derived from the Strong Interest Inventory. The first four sections of this test are entitled "Occupations", "School Subjects", "Amusements" and "Activities". For each alternative listed the subject is asked to say whether he would like this kind of activity or whether he would not. A sum of these "likes" tends to furnish an overall indication of the number of different kinds of vocational or avocational areas in which the individual feels an interest. This score is utilized as a measure of "range of interests".

METHOD

The subjects were culled from the files of various institutions in the area, and consisted of males between the ages of 16 and 60 who had been given the Strong Interest Inventory, the Rorschach Test, and some measure of intelligence. Of the 69 subjects used 23 were purely vocational cases, the remaining 46 being considered as having some type of personality difficulty.

Twelve subjects had been given the Wechsler-Bellevue, the remainder the WAIS, the standard scoring procedure being used throughout. On the Strong Interest Inventory the number of "like" responses under each of the first four interest sections were tabulated and summed for each individual. Eighteen standardized Rorschach scoring categories were employed (H, Hd, A, Ad, Aobj, Ad, Sex, Obj, Pl, N, Geo, At, Arch, Emb, Cl, Fire, Mask, and Abs). Responses not falling within any of these categories were considered in a separate or miscellaneous category.

RESULTS

Table I lists the means, sigmas and ranges governing age and WAIS scores. Computations involving the WAIS are based upon 57 subjects.

Table II records Pearson product-moment correlations between the Strong Interest score and the total number of Rorschach categories, the total number of Rorschach responses, and the WAIS Full Scale IQ.

Table III records product-moment correlations between the Strong Interest scores and H%, Hd%, A%, Ad%, and A + Ad%.

Table IV is product-moment correlations between each separate section of the Strong Interest Test and

¹ The authors wish to express their appreciation to John J. Hoopes for his assistance in this study.

TABLE I. Means, Sigmas, and Ranges for Age & WAIS Scores (N = 57)

	Age	WAIS Full Scale IQ	WAIS Verb. IQ	WAIS Perf. IQ
Mean	28.6	114.3	115.6	110.5
S. D.	8.95	8.4	11.0	8.7
Range	16 to 60	97 to 130	94 to 142	93 to 133

TABLE II. Number of Strong Interests Scores Correlated with Number of Rorschach Content Categories and Responses and with WAIS Full Scale IQ

	No. of Rorschach Content Categories (N=69)	No. of Rorschach Responses (N=69)	WAIS Full IQ (N=57)
Strong Inter. Score	.02	.08	.12

TABLE III. Total Strong Interests Correlated with Rorschach Content Categories (N = 69)

	H%	Hd%	A%	Ad%	A + Ad%
Total Number of Strong Interests	.14	.19	-.13	-.12	-.19

TABLE IV. Strong Interests correlated with Number of Rorschach Content Categories (= 69)

Strong Interests	No. of Rorschach Content Categories
Occupations	-.02
School Subjects	.04
Amusements	-.10
Activities	-.01

TABLE V. Number of Rorschach Categories and Responses correlated with WAIS Full Scale IQ (N = 57)

	WAIS Full IQ
Number of Rorschach Categories	.02
Number of Rorschach Responses	.18

the total number of Rorschach content categories.

Finally, Table V presents the results of a product-moment correlation worked out between number of Rorschach content categories and responses, and WAIS Full Scale IQ.

In no instance in each of the foregoing Tables were the correlations significant at the .05 level.

DISCUSSION

It has been the custom for many years for psychologists to assume a certain relationship between content

diversity on the Rorschach and what has been nebulously defined as "range of interests". The present study does not rule out the possibility that such a relationship may exist. However, if the score here derived from the Strong Interest Inventory can be considered as one operational measure of "range of interest", it would appear that a relationship between this measure and various quantitative expressions of content diversity is not significant beyond chance expectancy. Also, the demonstrated lack of relationship between intelligence test results and such content diversity is somewhat at variance with Beck's explicit statement of the relationship to be expected between these two. The generality of this finding is limited by the selective intelligence range of the sample. It would seem that further research is indicated to demonstrate other aspects of the predictive efficiency of content diversity measures.

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Some Personality Variables In Overt Female Homosexuality¹

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This paper reports an attempt to examine certain personality variables in homosexual women as compared with heterosexual women through the medium of projective test performance. Problematic as is our knowledge and understanding of homosexuality in men, this condition has received more scientific attention than has female homosexuality. Some empirical observations and much hypothetical thinking constitute the body of information available concerning this deviation, but there is a conspicuous absence of planned research into the personality dynamics of female homosexuality. A search of the literature revealed only one paper (Fromm and Elonen, 1951), and that a study of one case, dealing with projective test analysis of a female homosexual.

For the purposes of this study, the general hypothesis adopted is that overt homosexual women will differ from women with a heterosexual mode of life in certain personality characteristics. Those personality variables in which the two groups are predicted to differ are derived largely from psychoanalysis, which has generated various hypotheses regarding the psychogene-

sis of female homosexuality and the associated character development. For a concise and excellent review of the major psychoanalytic writings pertaining to female homosexuality, the reader is referred to the article by Fromm and Elonen (1951) in an earlier issue of this journal. The specific hypotheses tested herein do not presume to cover all potential differences, but are intended to tap some of those areas highlighted in psychoanalytic thinking, briefly: possible deficiencies in personality maturation, the nature of fixated libidinal aims, attitudes toward male and female prototypes, and conflicts in sexual role identification.

In the present research *homosexuality* is a behavioral diagnosis, which applies to mental attitude, not physical constitution, and to preferred object choice, not masculine and feminine identification. Sexual experience must therefore include homosexual relations on an overt level of expression as the preferred and predominant pattern. Similarly, *heterosexuality* is defined on a behavioral level. Since we do not know what normal psychosexual development is, nor what constitutes mature heterosexual adjustment, no better criterion could be found for homosexuality than the acceptance and maintenance of the conventional role of wife and mother. Submission to social pressures may push many women into the conventional role despite contrary proclivities; we can expect heterosexual choice to mask heterogeneous forms of adjustment. Similarly, homosexuality may be a substitutive relation resulting from restriction of heterosexual opportunity rather than from inherent psychological disposition. Nevertheless, the choice between the conventional pattern and a homosexual life is a critical one, and

¹ This is a condensation of a dissertation done at the University of Southern California under the direction of Dr. Georgene Seward in partial fulfillment of requirements for the Ph.D. The writer wishes to express appreciation for the participation of members of the Matachine Society and One, Inc., for the cooperation of Mrs. R. Morgan, Director, Parent-Child Observation Classes; and for the assistance of various colleagues: Mr. Howard Russell, who administered all the projective tests; Dr. Philip Merrifield, who was consulted on the statistical problems; Mrs. Geraldine Korda, Mrs. Mildred Malm, and Dr. Harvey Mindess, who rated the Figure Drawings; Dr. Evelyn Hooker and Dr. Vita Sommers, who judged the Rorschach protocols as homosexual or heterosexual, and Mr. Stephen Howard who rated the Rorschach material.

we can logically seek some determinants of this choice in intrapsychic conditions.

METHOD

In psychological research on homosexual men, subjects have usually come from such specialized groups as prison, hospital and clinic populations, and results have rarely been checked against comparable control groups. In the first reported study adequately designed to cope with these research problems, Evelyn Hooker (1957) stresses the necessity of preventing subjective errors of judgment due to theoretical preconceptions, of using a more representative sample of overt homosexuals rather than the deviant fringe, and of obtaining a comparable control group.

Subjects. The experimental population in this research consists of 30 overt female homosexuals provided through the Research Committees of the Mattachine Society² and One, Inc.³ Provisions for anonymity were assured. Personal interview determined that criteria for selection were met. Consequently, all of the homosexual women in this study can be said to be committed to a life pattern of overt homosexual practice, all were making at least a marginal adjustment to the community, aside from their homosexuality, at the time of this study, and none was receiving psychotherapy or seeking help for personal problems.

The heterosexual sample was drawn from groups of mothers whose children participated in a preschool program.⁴ Volunteers were requested for a study in "feminine psychology" who could meet these specifications: 1)

² The Mattachine Society was founded "for the purpose of providing true and accurate information toward the solution of the problems of human sex behavior, particularly those of the homosexual adult."

³ One, Inc. is defined as "an organization concerned with the interests of the millions of homosexual American men and women."

⁴ Parent Observation classes offered by the Los Angeles County Board of Education.

married at the present time and have children; 2) consider their own marriage as satisfactory as the average and expect it to last; 3) not receiving psychotherapy or psychiatric treatment. Provisions were made for anonymity of volunteering. From the 85% of those contacted who volunteered 30 subjects (approximately one-third of the total) were selected as control subjects purely on the basis of identifying information as to age and education. After checking both groups as to comparability of socio-economic status⁵ and national birth and origin, only a few substitutions were necessary. The object was not paired-matching, but general comparability of the two groups for age, educational level, acculturation, and socio-economic status. Statistical comparisons of the homosexual and heterosexual groups are presented in Table I.

None of the women in the control group was regularly employed; none had definite career aspirations. Most of these women are very much wrapped up in family life during this period when there are young children in the home. As a further check on the conformity of this group in femininity of attitude the Terman-Miles Attitude-Interest Inventory was administered. Mean and median scores are close to those reported by Terman (1938) on comparable groups of women, while both Terman and Miles (1936) and Henry (1941) have reported that groups of homosexual women fall much lower on the femininity scale.

Procedure. Rorschach and Figure Drawing Tests were administered individually by the same examiner. The test administrator codified and mixed the raw test data before they were submitted to the author or any other judges involved in making ratings. Rorschach and Figure Drawing material were judged independently.

⁵ Warner's (Warner, Meeker, and Eells, 1949) class grouping of occupations was used: homosexuals' own occupation versus heterosexuals' husbands' occupation.

TABLE I—Comparison of Homosexual and Heterosexual Groups in Age, Education, Socioeconomic Level and Acculturation

	Homo- sexuals	Hetero- sexuals		Proba- bility
Age				
Average age	30.60	32.13	t .85	NS*
Standard Deviation	7.85	5.71	F 1.89	.10
Educational Level				
Average years	13.60	13.30	t 0.0	NS
Standard Deviation	1.86	1.81	F 1.06	NS
Socioeconomic Level (Warner)				
Levels				
II	5	6		
III	5	5		
IV	11	11		
V	5	4		
VI	1	3		
VII	1	1		
Unclassified	2	0		
Cultural Status				
Foreign born	3	3		
First generation	8	9		

*NS-not significant

Particular categories of Rorschach and Figure Drawing response had been tied to the hypotheses of predicted personality differences between the two groups. These categories were defined and measured through quantification of formal scores and content themes on the Rorschach and of ratings and scores on Figure Drawings. The particular hypotheses and their scoring categories will be defined in the following section.

Since the use of content has emerged more creditably than other scoring methods from the critical analysis of Rorschach research (Zubin, 1954; Symonds, 1955; Ainsworth, 1954). Rorschach scoring categories are predominantly composed of response content. Schafer (1954, pp. 131-138) recently devised a tentative system of content categorization, formulated within the psychoanalytic theoretical framework. In devising a Content Rating Scale for use in this study, modifications and additions were made where Schafer's classifications failed to correspond adequately to the hypotheses under investigation. In addition, weightings of content were established in accord with conventions of Rorschach interpretation, i.e., the more unusual or

personally determined the response, the more primitive, crude, and/or the more emotionally charged, the higher would be the rating.

Certain characteristics of the Figure Drawing test were also related to some of the hypotheses. Sex drawn first, ratings on Swenson's Sexual Differentiation Scale (Swenson, 1955), and Goodenough (1926) scores, as a measure of maturity of body concept, were employed.

Rorschach response was rated by the author and one other judge. Since it could be anticipated that the presence of any perceptible difference could be rejected on inspection for many of the classes of response, reliability of scoring was checked only where some trend was suggested. Figure Drawing ratings were made independently by three other judges, and the reliability of judgment determined.

The Hypotheses, Response Classification, and Rationale. The general hypothesis that overt homosexual women will differ from women with a heterosexual mode of life in personality characteristics, and that this will be reflected in projective test response, was subjected to the following type of test. Two of the judges who rated

Figure Drawing response on certain particular features were also asked to divide the 60 male-female sets of drawings into two equal groups according to their subjective judgment of whether they were homosexual or heterosexual. Two other judges, who are experienced Rorschach workers, were asked to make a similar decision on the Rorschach protocols.

A review of the literature on homosexuality has contributed to some expectations of how homosexual women may differ in personality characteristics from women who have accepted the heterosexual pattern of life. Hypotheses concerning certain expected differences were formulated and investigated by predicting from the specific differences in Rorschach records and Figure Drawings produced by these behaviorally disparate groups.

HYPOTHESIS I

Homosexual women would be expected to show a stronger dependency orientation than heterosexual women.

RORSCHACH RESPONSE

- I. Dependency Orientation
 - A. Supply (Oral-Receptive Orientation).
 - B. Demand (Oral-Aggressive Orientation).

This hypothesis has been derived from the theory that homosexual women have suffered severe deprivation and frustration in the early relationship with the mother, resulting in preoccupation with dependency needs and hostility over deprivation. Freud (1920) and Fenichel (1945) are representative of many psychoanalysts in emphasizing the regressive aspects of the female homosexual pattern which 'revives' the satisfactions and conflicts experienced in infancy, while Helen Deutsch (1933, 1944), Jones (1938) and Melanie Klein (1954) particularly stress the oral-sadistic fixation of female homosexuals.

Dependency Orientation is expressed in Rorschach content in preoccupation with oral demands and supplies, with modes of oral gratifica-

tion or oral attack, and with themes of dependency or deprivation. In this area we are interested first in the general summation of "oral" themes which would be expressed in a *Total Dependency Score*, and next in a relative emphasis on *Supply*, in which passive-receptive themes, the pleasures of taking in and receiving or giving, are expressed, and *Demand*, in which oral-aggressive devouring and attacking themes, and images of deprivation, are expressed.

HYPOTHESIS 2

Homosexual women will perceive women, and relationships between women, with a hostile-aggressive cathexis.

RORSCHACH RESPONSE

- II. Hostile-Fearful Conception of the Feminine Role.

This expectation is also derived from those psychoanalytic theories that stress the hostile tie to the mother and oral-sadistic fixation as the basis of female homosexuality. The inference is that a disturbed relation with the mother in early life is retained to the present, and revealed in perceptions of women as frightening and threatening figures, prone to destructive action and hostile-aggressive interaction. If such early disturbances are currently active, we would expect to find a strong affective charge in images and fantasies of women, not merely mildly critical attitudes. Therefore, this scoring category attempts to segregate Rorschach percepts involving women which reflect intense fearful and aggressive affects.

HYPOTHESIS 3

Homosexual women show a more hostile and rejecting attitude toward men than do heterosexual women.

RORSCHACH RESPONSE

- III. Disparagement (Symbolic Castration) of Men.
 - A. Disparagement of Male Figures.
 - B. Disparagement of Phallic Symbols.
 - C. Castrating Symbols.
 - D. Castrating Verbalizations.

Freud (1920), Abraham (1927), and Fenichel (1945) consider that in the genesis of female homosexuality, hostile and competitive attitudes toward men are an important factor, and are based on strong penis envy and the castration complex. In this category we were interested in expressions of disparagement of men, as expressed in Rorschach images of immature, insignificant, ridiculous, or deficient male figures, and also in the interpretation of the usual masculine sex symbols in a derogatory manner. As another approach the employment of castrating symbols or castrating verbalizations throughout the Rorschach record were defined for measurement. While the summation of scores in these various areas might prove most meaningful, the subclasses are sufficiently different in content to merit independent consideration.

HYPOTHESIS 4

Homosexual women fear hostile-aggressive features of the masculine role more than do heterosexual women.

RORSCHACH RESPONSE

- IV. Hostile-Fearful Conception of the Masculine Role (Phallic-Aggressive emphasis).
- A. Phallic-Aggressive Men.
 - B. Phallic-Aggressive Animals.
 - C. Phallic-Aggressive Objects.
 - D. Sexual Responses with Destructive Content

This hypothesis evolves from the theory that homosexual women fear being the recipient of a masculine sexual approach which they conceive of as dangerous and destructive. Among psychoanalytic writers Jones (1938), Helene Deutsch (1933, 1944) and Melanie Klein (1954) postulate that the fear of masculine sexual approach derives from the projection of strong aggressive drives, while other investigators have suggested that early sexual aggression and resultant fear of masculine sexual approach could be a significant factor in diverting women from heterosexual objects (Hamilton, 1936; Henry, 1955; Landis, Landis, and Bolles, 1940).

The Rorschach content category includes perception of objects and animals commonly assumed to symbolize masculine sexual aggression because of the expectation that fear of masculine sexual aggression would increase preoccupation with such images. Such fear would be most directly expressed in the perception of masculine figures as attacking or potentially threatening or overpowering. An emphasis on all three classes of response would strengthen the impression that fear of men is directly associated with fear of sexual attack. The final subclass of response aims directly at fear of sexual damage to the female.

HYPOTHESIS 5

Homosexual women show more confusion and conflict about sexual role, and rejection of feminine identification, than do heterosexual women.

RORSCHACH RESPONSE

- V. Rejection of Feminine Identification.
- A₁ Confusion in Human Sex Identification.
 - A₂ Confusion in Identification of Sexual Areas.
 - B. Masculine Emphasis.
 - C. Reference to Perversions.
 - D. Warding-off Intrusion.
 - E. Rejecting Attitude Toward the Conventional Feminine Role.
 - F. Castration emphasis.
 - G. Sensuous Feminine Detail or Homoerotic Arousal.
 - H. General Increase in Sexual, Anal, and Oral Imagery.

FIGURE DRAWING

1. Opposite Sex Drawn First.
2. Lower Sexual Differentiation Ratio (Swenson Scale)

This hypothesis expresses the assumption that homosexual women do not make a firm feminine identification. This would seem to be quite obvious, but in actuality the possible patterns of identification and relationship are quite complex. Among women who engage in homosexual activities there are those who are bisexual, those who are homosexual but play a more "masculine" or more "feminine" role with different partners or at dif-

ferent periods. In some women the masculine identification appears to be the dominating theme of their lives; others consider themselves feminine in every way; and others reject the concept of "masculinity" or "femininity" and refuse to think of themselves as "either man or woman". One psychoanalyst unequivocally states that all female homosexuals make a masculine identification (Jones, 1938), while another may believe that what really is enacted is a mother-child relationship and that masculine identification is not a necessary accompaniment (Deutsch, 1944).

The homosexual subjects of this study were questioned regarding their concept of their role. Usually those who claimed the masculine role did not equivocate; it was among the "feminine" partners that we find denial of the concept of "masculinity" or "femininity" and a reluctant and evasive acceptance of the "feminine" position, usually because they felt less dominant or effective than their partners. Evaluation of these personal reports does suggest that most of the homosexual women in this study are rejecting of feminine identification.

Although homosexuality and masculine tendencies in women are not necessarily conjoined, we would expect more confusion in sex role in homosexual women. Even if this does not arise in a strong masculine identification, subscription to an unconventional life pattern might contribute to insecure and conflicting role concepts.

Studies of male homosexuals have suggested that deviation occurs in identifying the sex of figures (Bergmann, 1945; Due and Wright, 1945; Wheeler, 1949) and sexual areas (Pascal and Herzberg, 1952) in the Rorschach, and in graphic depiction of human figures (Baker, Mathias, and Powers, 1953; Geil, 1944; Mainord, 1953). In the present study a carefully defined and detailed system of rating Rorschach human figure percepts and sex area identification was utilized.

Other aspects of the subjects' Rorschach perceptions and interpretations generally interpreted as reflecting dissatisfaction with femininity were also investigated. For the Figure Drawing test, sex drawn first was noted, and the Swenson (1955) Sexual Differentiation Scale was applied.

HYPOTHESIS 6

Homosexual women show more limitations in personal-social adjustment than do heterosexual women.

RORSCHACH RESPONSE

VI. Limitations in Personal-Social Adjustment.

- A. Distanciation in Human Relationships.
- B. Mood Tone in Content.
- C. Emotional Reactivity Diminished (Sum C; Color Ratio)
- D. Difficulties in Ego Integration.

1. Humanization of Animal Figures.
2. Human-Animal Combinations.

FIGURE DRAWING

1. Lower Goodenough Score on Same Sex Figure.
2. Lower Goodenough Scores on Face and Head of Same Sex Figure.

This hypothesis attempts to deal with some central aspects of personality development. The theory that female homosexuality requires considerable regression would imply that the development of the self would be immature and/or conflicted and that capacity for interpersonal relationships would be poorly developed.

One aspect of limitations in personal-social adjustment might be the inability to maintain warm, close, personal relationships with people. Features of Rorschach performance which might conceivably express such limitations would be the substitution of unreal or remote beings for ordinary human figures (a possible indication of deficiency in empathetic experience), the perception of images in which the emotional tone projected is one of coldness, loneliness, and isolation, or in a restriction of emotional responsiveness to the environment.

Difficulties in ego integration represent another aspect of limitation in personal - social adjustment which

might be associated with homosexuality, as has been suggested by Solomon (1954). Conflicts between basic drives, superego pressures and ego aims, or between incompatible and conflict-laden identities may interfere with the achievement of ego identity, which Erikson (Senn, 1950) considers the criteria of ego integration in adolescence. If a sense of ego identity is not achieved, an effective balance within which one can cope with conflict is lacking, and regressive reactions accompanied by archaic forms of thinking result.

In the Rorschach responses disturbances in integration might be indicated by the necessity of disguising the expression of drives and wishes (as in humanization of animal figures), or revealed in illogical combinations in perceptions of figures (as in human-animal combinations). The graphic presentation of the body image, as in a figure drawing, might reveal inadequate or disturbed development of the body-concept, which is related to self-concept. Since Fiedler and Siegel (1949) conclude that low scores on the face and head area correlate with evasion of interpersonal relations, we would also predict that homosexual women more frequently place low in this area of scoring.

RESULTS

The Rorschach instrument presents peculiar problems which tax statistical methods. Cronbach (1949) has provided the most extensive analysis of statistical methods applied to the Rorschach, and his recommendations guided our statistical choices. A test of the null hypothesis, rather than estimates of the probable degree of relationship, seemed indicated because of the small number of cases. For the Rorschach material, chi-square and the median were used, but the median was not always a meaningful cutting point because of extreme skewedness of the distribution. In some cases, the cutting point was set up at quartile points, or be-

tween zero and positive scores, on inspection of the distribution for the total group combined. Where warranted, chi-square was supplemented by a contingency coefficient as an indication of the magnitude of the relationship. The nature of the distribution was also considered, with the possibility of curvilinear trends in mind.

The first response measure used on the Figure-Drawing performance, whether subject drew their own or the opposite sex first, is a simple yes-no rating easily evaluated by a chi-square test of the significance of the difference between the two groups. The other two response measures, Goodenough Score and rating on the Swenson Sexual Differential Scale, contain more units of measurement, permitting a wider distribution of scores, so that a *t*-test of the difference between means, preferable as a more sensitive statistic, could be used.

Table II presents the results of

TABLE II—Psychologists' Judgments of Homosexuality from Rorschachs and Figure Drawings

	Number Correct (N=60)	<i>t</i>	<i>p</i>
Rorschach			
Judge A	40	1.93	NS
Judge B	40	1.93	NS
Figure Drawing			
Judge C	36	1.11	NS
Judge D	38	1.43	NS
NS - Not Significant			

judgments made by experienced clinical psychologists attempting to differentiate homosexual and heterosexual Figure Drawings and Rorschach records. The *t*-test for uncorrelated proportions was used, and results did not serve to refute the null hypothesis. In making judgments as to whether Rorschach protocols were homosexual or heterosexual, each judge was correct in 40 out of 60 cases,^a which

^a Both judges agreed in their decision in 42 out of 60 cases, agreed and were correct in 31 out of 60 cases.

TABLE III—Differences in Rorschach Measures between Homosexual and Heterosexual Groups

Response Category	Chi-square	Probability	Contingency coefficient	Phi
I. Dependency Orientation				
Total score - Absolute	1.668 ^a	NS		
- % of R.	3.270 ^a	.10	.23	
A. Supply	1.072 ^a	NS		
B. Demand	0.600 ^b	NS		
II. Hostile-Fearful Conception of Female Role	13.416 ^a	.01	.47	.96
III. Disparagement of Men	6.667 ^a	.05	.33	.72
A. Disparagement of Male Figures	3.270 ^a	.10		
B. Disparagement of Phallic Symbols	.....	NS(I)		
C. Castrating Symbols	.....	NS(I)		
D. Castrating Verbalization	4.320 ^a	.05	.27	
IV. Hostile-Fearful Conception of Male Role	0.068 ^b	NS		
A. Phallic Men	3.292 ^a	.10		
B. Phallic Animals	.....	NS(I)		
C. Phallic Objects	.....	NS(I)		
D. Destructive Sex Content	.....	NS(I)		
V. Rejection of Feminine Identification				
A ₁ . Confusion in Human Sex Identification	0.600 ^a	NS		
A ₂ . Confusion in Sexual Area Identification	0.600 ^b	NS		
B. Masculine Emphasis	.....	NS(I)		
C. Reference to Perversions	.....	NS(I)		
D. Warding-off Intrusion	.....	NS(I)		
E. Rejection of Conventional Feminine Role	.....	NS		
F. Castration Emphasis	0.600 ^a			
G. Sensuous Feminine Detail and Homoerotic Arousal	.....	NS(I)		
H. Increase in Open Oral, Anal, and Sexual Imagery	2.777 ^a	.10		
VI. Limitations in Personal-Social Adjustment				
A. Distanciation in Human Identifications	0.600 ^a	NS		
B. Mood Tone in Content	.....	NS(I)		
C. Emotional Reactivity Diminished				
Sum C	11.380 ^a	.01	.44	.97
Color Ratio	3.270 ^a	.08	.23	
D. Difficulties in Ego Integration				
1. Humanization of Animal Figures	.....	NS(I)		
2. Human-Animal Combinations	5.964 ^a	.02	.29	.95

^aDifference in expected direction. ^bDifference not in expected direction.
 NS - Not Significant. NS(I) - Not Significant on Inspection.

TABLE IV—Differences in Figure Drawing Measures between Homosexual and Heterosexual Groups

Response Measure		Probability	Phi
Opposite Sex Drawn First	χ^2 2.724	.10	
Swenson Sexual Differentiation Scale	t 1.765	NS	.93 (control) .81 (experimental)
Goodenough Low Total Score	t 3.25	.01	.94 (control) .95 (experimental)
Low Facial Detail Score	t 1.662	NS	

NS - Not significant

TABLE V—Comparison of Homosexual Groups on Some Rorschach Formal Scores

	Mean Homo- sexual	Hetero- sexual	Chi- square	Proba- bility
R	29.17	27.87	0.612	NS
M	5.6	4.1	0.068	NS
Fc+c	4.3	3.7	0.000	NS
Sum C	1.08	3.05	11.380	.01
H+Hd %	21.5	21.4	1.067	NS

NS - Not Significant.

comes very close to being significant at the .05 level.

Associated with the six specific hypotheses are measures of categories of Rorschach response and Figure Drawing characteristics which provide 34 statistical measures for comparison of the experimental and control groups. Results are summarized in Tables III and IV. Probability values at the .10 level or above are reported, and contingency coefficients give further indication of the degree of relationship.

Since differences in Rorschach scores between groups may be a function of *R*, the number of responses, it should be reported that there was no significant difference in mean *R* between the two groups. Comparison on all of the Rorschach formal scores would not be pertinent in this paper, but Table V reports *R* and some other formal Rorschach score comparisons for the two groups which have some relevance to later points of discussion.

DISCUSSION

Although none of the judges was

able to distinguish homosexual Rorschach records or Figure Drawings significantly better than chance, the trend was consistently on the positive side. Apparently there are some factors operating to favor correct identification, insignificant though the trend may be. In Hooker's (1957, 1958) research with male homosexuals judges were equally unsuccessful in differentiating paired homosexuals and heterosexual records. She concluded that probably less than one-third of the homosexual records could be identified by usual clinical criteria, and recommended skepticism about most homosexual-content signs. With female homosexuals we must also conclude that, in the majority of cases, they cannot be distinguished from heterosexuals on the basis of projective test performance, at least at our present level of clinical proficiency.

Most of the comparisons on specific characteristics of projective test performance failed to produce differences of sufficient magnitude to satisfy tests of significance. A few comparisons showed such clear-cut differences as to warrant serious consideration. The detailed findings will be discussed in relation to the six specific hypotheses.

Hypothesis 1. The measures of Dependency Orientation in Rorschach content give inadequate evidence to support the predictions of a stronger dependency orientation in homosexual women. When all the dependency scores are taken together there is a very slight tendency in the expected direction, which is not main-

tained in the *Demand* classification considered alone. In the *Demand* category, scores of the homosexual group tend to follow a curvilinear distribution—a tendency which could be shown to be significant at the .05 level by favorable statistical manipulation in selection of a cutting point. If the evidence were more convincing, it would suggest that there may be more of a problem with oral hostility in the homosexual group, which can be indicated either by over repression or over expression in Rorschach thought content.

An examination of the more specific classes of response under *Dependency Orientation* gives further opportunity to evaluate the coherence of the results. It does not appear that there is any tendency for the homosexual group to accumulate scores in the more directly oral response classes than in those classes which reflect dependency needs presumed to have an oral basis. The weighting of responses made it easy to explore further the continuum of "depth" as defined by Schafer (1954, pp. 149-153) by comparing the two groups on the incidence of crude, primitive, and intense oral responses. The results were negative, and this finding tends to contradict the psychoanalytic hypothesis of regression, particularly oral regression, as outstanding in homosexual women.

Images of the breast and the oral cavity and apparatus do figure more often in the responses of homosexual women. Since these organs are important in the sexual practices of homosexual women, such images are not, *per se*, evidence for any genetic theory of oral fixation. Although the differences in the incidence of such responses are statistically significant, occurrence of such responses is not frequent enough to be of individual predictive value.

In the kinds of responses expressing orality and dependency themes, the heterosexual women more often expressed positive oral or affectional

gratifications, in such responses as baby animals nuzzling, people kissing, babies nursing, etc. More homosexual women express dependency yearnings which are not being gratified as in seeing pitiful figures, animals begging, and especially, images of "reaching" for something. Thus the impression obtained from the Rorschach responses is not so much of a stronger oral fixation in one group than the other, as of a more accepting and positive experience of dependency gratifications in the heterosexual women, while the homosexual women more often express unsatisfied dependency yearnings.

Hypothesis 2. Responses in the class of Rorschach response, *Hostile-Fearful Conception of the Feminine Role* were contributed almost exclusively by the homosexual group. The difference between the two groups is highly significant, above the .01 level, the reliability of judgement was high (.96), and the null hypothesis is rejected.

The more frequent perception of female figures as aggressive or frightening can also be compared with similar perceptions of male figures to see whether this is a reflection of generalized hostility, or whether it has a more specific application to women. A similar category for male figures has been scored under *Phallic-Aggressive Men*, where no significant difference was found between homosexual and heterosexual women. The differential condition for female homosexuality appears to be association of feminine action and interaction with hostility and aggression.

Psychoanalytic theory predicts that the residue of infantile feelings for the mother is currently active in female homosexuality, and that guilt and anxiety motivate choice of a homosexual love object as a denial of such feelings. The present findings would tend to support this view as relevant, if not to all, to a substantial group of female homosexuals. As we have seen, in relation to Hypothesis I, the ex-

peccation of oral-sadistic preoccupation as a differentiating condition was not adequately supported in the analysis of Rorschach images. To conclude that perception of feminine figures as aggressive is an end result of an oral-sadistic tie to the mother would go beyond the evidence. Expression of hostility in association with human figure responses, rather than in primitive oral-aggressive concepts, might mean that, if such affects stem from early conflicts, they are more often expressed in mature, reality-oriented derivatives rather than experienced on an archaic, primitive level.

Hypothesis 3. The distribution of Rorschach scores under the general category, *Disparagement of Men*, did provide some support for the prediction that disparaging and attacking attitudes toward masculinity would be more frequently expressed in the homosexual group. When perception of male figures is considered independently, this tendency was not pronounced enough to attain the .05 level of significance. "Castrating" verbalizations, not responses, in reference to male figures and symbols also contributed positively to the general category. Hostile feelings find outlet in such expressions as: "Chop this off here"; "Cut them off at the legs"; and more directly, "If you take off this penis, the card looks better." Symbols of castrating impulses such as the "vagina dentata" response, or "Two animals gnawing on a piece of wood" are infrequent in these records, and as likely to be produced by the heterosexual.

If we study the responses to male figures scored as disparaging we see that quite a few heterosexual women also refer to men as inadequate or comical, but rarely with strong affect. Disparaging responses are more frequently given by homosexual women, with stronger expression, and sometimes with marked ambivalence—that is, a prestige figure is attacked and derided.

The rejection of men as love objects by homosexual women is often buttressed, in their own statements, by expressions of aversion, repulsion, and contempt for men. Some psychoanalytic theorists have considered such attitudes relatively superficial, serving as a defense against heterosexual temptation and/or as a rationalization for homosexual preference. Others have considered the desire for revenge against men as the primary determining force, at least in certain forms of female homosexuality.

A divergent trend might have been more conspicuous in this category, *Disparagement of Men*, if the classes of response which were not discriminating were dropped. As it is, the statistical results suggest that there is probably a significant difference between the two groups, but this means only that somewhat more homosexual women expressed such disparaging and hostile attitudes toward men in Rorschach content, not that such expression were characteristic of the majority of the group.

Hypothesis 4. The predictions that a phallic aggressive emphasis would more frequently be pronounced in the Rorschach records of homosexual than of heterosexual women were not borne out by the results. What should be noted here is that perception of men or of animals figures as phallic-aggressive is not infrequent in the homosexual groups, since both occur in more than half the records, but that such perceptions occur as often in the heterosexual group. Apparently many heterosexual women also conceive of masculine figures as threatening and overpowering without this precluding heterosexual object choice.

Homosexual women often forcibly express fear or aversion to sexual domination by men. Sometimes this is ascribed to frightening experiences in the past, but some psychoanalysts interpret it as a consequence of the projection of their own aggressive drives. Whatever the individual dynamics, the expected result would be

the projection in the Rorschach material of an exaggerated concept of the aggressive and threatening qualities of masculinity. In this material we do not find such conceptions to be a differentiating feature in the acceptance of a homosexual or a heterosexual way of life.

Hypothesis 5. In relation to *Rejection of Feminine Identification* many different classes of Rorschach content and several ratings of performance on the Figure Drawing Test were examined. Results were generally negative, as were Evelyn Hooker's (1958) results in her study of male homosexuality in the Rorschach. Some of these classes of response are of special importance as generally accepted criteria in clinical practice for judging sexual identification, and homosexuality.

In Rorschach response *Confusion in Human Sex Identification* has been considered in several previous investigations to be characteristic of male homosexuals. In the present study responses were weighted for the degree of disturbance concerning sexual identification of the human figures seen in the Rorschach cards. Scores of one point, which were given for asexual and blurred figures, and scores of two points, which were given for reversals, alternation, uncertainty, and identification of symmetrical figures as male and female, occurred in approximately half the records of both groups. Only the score of three points, given for bizarre sex responses, persistent refusal to identify the sex of any figure, or marked subjective disturbance over uncertainty of identification, was discriminating. This difference was significant at the .05 level. The two subjects in the heterosexual group who scored at all at this level did so with borderline responses, which would accentuate the significance of the more disturbed responses given by the homosexual women. However, such disturbed responses cannot be considered generally characteristic, nor are they of much diagnostic value, since they were given by

less than one-third of the homosexual group.

Individual comparisons of sexual identification of commonly perceived human figures were made as a further check, and failed to reveal any significant differences between the two groups.

Evelyn Hooker (1958) made similar comparisons of these widely used clinical signs of confusion in sexual identification in her study of homosexual men. She found *anal*ity and *feminine emphasis* to be the only statistically significant signs, and the number of records displaying such features corresponded closely to the proportion of female homosexual records that could be discriminated as showing evidence of disturbance over sexual identification.

The next class of Rorschach response, *Confusion in Identification of Sexual Areas*, did not discriminate between the two groups. Here spontaneous response and response obtained in Inquiry, following Hutt's (Hutt and Shor, 1946) method, were analyzed in various ways, without discovering any significant differences between the two groups. Pascal's (Pascal, Ruesch, Devine, and Suttell, 1950) norms were used as the standard, and were confirmed by our results which showed the majority in both groups responding in the expected manner. The usual assumption is that deviations from the normal mode of response indicate deviations in sexual adjustment, and, indeed, Pascal and Herzberg (1952) were able to demonstrate that in prison populations pedophiliacs and homosexuals gave more deviant responses than do either controls or rapists. It is evident, however, that in this comparison of homosexual and heterosexual women deviation in identification of sexual areas was not a meaningful index of homosexual deviation.

One class of response, *Increase in Crude Oral, Anal and Sexual Imagery*, showed a difference between the

two groups at better than the .10 level of confidence, with more frequent open sex responses given by the homosexual group as the principal contributor to the difference. It has been frequently shown that various groups with sexual problems give more frequent and more open sex responses. Perception of female sex organs and breasts, especially, is higher in the homosexual group, and we can recall the higher incidence of open mouth, throat and tongue responses in the oral category. Our interpretation is that the difference in sexual aim and object is reflected in the greater frequency of such images in the homosexual group. Evelyn Hooker's finding that anal emphasis was one of the few signs distinguishing her male groups of homosexuals and heterosexuals would be subject to the same interpretation.

None of the other classes of Rorschach content examined in relation to sexual identification revealed significant trends in either direction. Hooker found *feminine emphasis* significantly differentiated her two groups; for our subjects *masculine emphasis* was not significant.

Rejection of feminine identification might also be expected to influence homosexual subjects to draw the male sex first in the Figure Drawing test. We find that 73 per cent of the heterosexual women and 53 per cent of the homosexual women drew their own sex first, a difference significant only at the .10 level. Less than half of the homosexual group drew the male sex first.

As another measure of confusion in sexual identification Swenson's Sexual Differentiation Scale was applied to the drawings of the subjects by three raters. Reliability of rating is high, particularly with the control group. However, variance of scores, independently for each judge, or for the average of the combined ratings, was not sufficient to discredit the *t*-test. Although a few more subjects in the homosexual group rated low, i.e. made

drawings which were very atypical or difficult to differentiate as to sex, the majority could not be distinguished by such a scale.

The problems encountered in rating are more enlightening. The raters had difficulty in rating sets of drawings where one of the two drawings showed good sex differentiation, while the other did not, and such ratings gravitated toward the middle of the scale. Eight of the sets of drawings were notable in that the man drawn appeared extremely masculine, but the female figure was also masculinized. Four of the sets of drawings showed excellent sexual differentiation of the female, while the male figure looked like a woman in men's clothing. These unusual types of drawings were made exclusively by the homosexual women.

Drawings where sex role distinctions are somewhat blurred because of oversimplification, or some overlapping of masculine and feminine characteristics, were as likely to occur in one group as the other. In fact, they were characteristic of at least one-third of the heterosexual women. In the heterosexual group the common tendency appeared to be to make a better drawing of a woman than of a man, with better sexual differentiation, although not of the overelaborate, narcissistic type, and to represent the male as relatively immature and passive. All of the very masculine appearing drawings of men were made by the homosexual women.

In summarizing the group comparisons of homosexual and heterosexual women on deviation in sexual identification as revealed in projective tests, we can only conclude that the usual diagnostic criteria are not substantiated by objective results. Therefore, the predictions about rejection of feminine identification and confusion in sexual identification were not confirmed.

Hypothesis 6. The prediction that homosexual women would show some limitations in personal-social adjust-

ment to a greater extent than heterosexual women was based on the theoretical association of homosexuality with regression, and scattered findings and reflections on homosexuality in the literature that suggest that homosexuality is accompanied by a disturbance in the self-concept and in capacity to relate to others. A definitive analysis of so complex an area is beyond the scope of this paper, but some supposed aspects of personal-social adjustment were examined.

It has been hypothesized that, in Rorschach content, *Distanciation in Human Identifications* is related to inability to accept and identify closely with other people, (although lack of self acceptance may be the more fundamental problem). There were no significant differences between the two groups in this category of response. Fantasy figures, culturally remote figures, and hooded and masked figures were commonly used in both groups. In her study, Evelyn Hooker (1958) also compared real or unreal figures in Rorschach content of male homosexual and heterosexual groups, and found no significant differences.

Hooded and masked figures can be interpreted as indicating attitudes of concealment and distrust and associated with paranoid feeling. Such responses, along with similar content such as isolated masks or eyes, were no more frequent in the homosexual group.

The attempt to measure unsatisfactory emotional relationships through *Mood Tone*, as reflected in content suggesting feelings of loneliness and barrenness, revealed no significant trends.

Measures of *Emotional Reactivity* through color response reveal a freer emotional reactivity in the heterosexual women. Chi-square for the distribution of Sum C scores showed a highly significant difference between the two groups. Since Color Ratio is another means of measuring essentially the same phenomena one would expect results to be similar. Because of

peculiarities of the distribution the level of confidence for a difference in Color Ratio was only .08. If a chi-square test is applied measuring combined differences in the first and fourth quartiles versus the middle half of the distribution, the difference is significant at better than the .01 level ($X^2=8.07$).

That low Sum C scores are characteristic of the homosexual group but not of the control is perhaps best indicated by this comparison: two-thirds of the homosexual group have Sum C scores of less than 2.0, while only 7 out of the 30 heterosexuals scored this low. If we accept the relation between color response and emotional reactivity, the obvious interpretation of such emotional restriction would be that it represents a protective withdrawal. We need to take into account other Rorschach variables. Since *R*, *M*, and *Fc-c* scores tend to be higher (though not significantly so) in the homosexual groups, the Rorschach records are not generally less expressive. Where achromatic responses outnumber the chromatic responses, it is interpreted that "... the person's responsiveness to outside stimulation has been interfered with by some kind of traumatic experience and withdrawal has resulted." (Ainsworth and Klopfer, 1954, p. 293). The implication is that the need for affection and response from others is present, but that previous rejections have led to an over-cautiousness in emotional contacts.

The argument could be advanced that emotional cautiousness results from the particular problems homosexuals encounter in facing social disapproval and in maintaining permanent love relationships. However, thus far, studies of male homosexuals have indicated no greater degree of emotional restraint, yet male homosexuals bear the brunt of society's disapproval and their love relationships are even more likely to be fleeting. Another possibility, in view of the stereotyped association of emotionality with femininity, is that inhibition of

overt emotionality could reflect rejection of femininity and emulation of masculine patterns. Since alternative interpretations are feasible, we can only very tentatively suggest that positive findings of diminished emotional reactivity in homosexual women support the contention of unsatisfactory foundations in early life for emotional relationship.

In relation to *Ego Integration*, the class of response which did show a significant difference, (.02) between the homosexual and heterosexual groups was *Human-Animal Combinations*. Responses combining human and animal parts in the same percept were given by over one-third of the homosexual group. Such responses were not only rare in the control group but were more conventional. Comments that human figures in Card III have a "bird's head" or a "duck bill" have less personal meaning because they are common ones. In contrast, responses from the experimental group were more unusual, and therefore more personally determined, such as "A man with the face of a dog", "An acrobat with a dragon head", and "Part-woman, part-rabbit, with a poodle body". We can recall that unusual male-female combinations in one percept also occurred occasionally in the experimental group. Since such combinations do not occur in reality, their acceptance as Rorschach percepts takes liberties with reality and implies some degree of submission to autistic processes. The question arises whether we are seeing here an indication of generalized thinking disorder, or whether such responses occur with more specific significance.

Watkins and Stauffacher (1952) have devised an Index of Pathological Thinking for the Rorschach which has been cross-validated in research by Power and Hamlin (1955). Since it seemed necessary to the interpretation of the findings to have some idea of the comparative degree of pathological thinking in both groups, the

author undertook to judge the Rorschach content with this Index. In each of the fifteen categories it was obvious on inspection that neither group scored significantly more than the other, so that this effort was not pursued further. It seemed clear that in no single category of pathological thinking did the homosexuals exceed the heterosexuals to the extent found under *Human-Animal Combinations*.

Human-animal and male-female combinations in one percept demonstrate poor integration of image components. Such responses reflect defense instability by permitting the intrusion of conflicting elements at the expense of logic and consistency. The inability to maintain internally consistent human images suggest that disharmony within the self is consciously experienced, a condition that may be associated with an uncertain sense of ego identity.

In Figure Drawing performance the Goodenough score was employed as presumably having a relation to the variable of *Ego Integration* as a measure of a mature and realistic body concept. The reliability of the judges' scoring was high. The F-test applied to the data showed that the samples were not homogeneous; variance in scores for the homosexual group is significantly larger than that for the control group. The *t*-test assumes homogeneous variances in the two samples. However, using the larger of the two sample variances as the best estimate of the population variance gives a very conservative test of the difference between two means. The *t*-test based on the larger population variance is 3.25 (with the smaller variance the results would be 4.85), which is significant at the .01 level. This measure is, if anything, an underestimate of the difference between the groups.

Scores on Facial Detail were not significantly lower in the homosexual group.

The distribution of Goodenough scores in the two groups tells us that

scores in the homosexual group scatter more toward the extremes; that is, a few more homosexual women attain high scores for excellent representations of the human figure, and considerably more contribute to the low end of the scale. (In the group that have Goodenough scores below 20 are two controls and 10 homosexuals.)

Nude figures and incomplete and unfinished figures were more frequent in the homosexual group and contributed to the lower scores. The inability to complete figures may express most directly an acute anxiety concerning the body image,—conflict which is too disruptive to permit formation of an internally clear, complete, consistent self image. In fact, poor figure drawing performance may reflect the same difficulty that underlies combinations of male-female and human-animal percepts.

Excessive conflict expressed in figure drawing and in use of human-animal combinations in the Rorschach are often taken as indications of conflict in sexual identity. It is interesting that in this investigation the more direct indices of difficulties in sexual identification did not differentiate between the homosexual and heterosexual groups as successfully as did the measures of a general kind of difficulty in ego integration.

To summarize, the hypothesis that homosexual women would show more evidence of limitations in personal-social adjustment led to certain predictions about Rorschach and Figure-Drawing performance which have been supported in part. The markedly reduced color reactivity in the homosexual Rorschach records would be interpreted as evidence of reduced emotional responsiveness in relations with others. The more frequent use of human-animal combinations in Rorschach images and the higher incidence of inferior drawings of the human figure suggest that difficulties in ego integration may be more often associated with homosexuality than with heterosexuality.

SUMMARY AND CONCLUSIONS

Homosexual women were compared with heterosexual women on certain variables of projective test performance (Rorschach and Figure Drawing) related to hypotheses that homosexual women would be rated higher in such characteristics as (1) dependency; (2) hostile-fearful conception of the feminine role; (3) disparagement of men; (4) hostile-fearful conception of the masculine role; (5) confusion and conflict in sexual identification, and (6) limited personal-social relations.

On the basis of clinical judgment, psychologists who functioned as judges were unable in blind analysis to correctly identify either the Rorschach records or Figure Drawings as homosexual or heterosexual with a degree of accuracy that would be considered statistically significant.

The hypothesis which obtained the strongest support from the results states that homosexual women perceive women and feminine relationships with a hostile-aggressive cathexis, which would be reflected in Rorschach images of female figures as frightening and/or aggressive. This finding would tend to support the concept of homosexuality as a defense against hostility, fear, and guilt in relation to women (presumably originating in significant early relationships).

Some of the predictions derived from the expectation that homosexual women would show more limitations in personal-social adjustment were borne out by the results. A highly significant difference in Rorschach color reactivity suggests that affective output is reduced in the majority of homosexual women, and implies that they experience less emotional gratification in their relations with people. Certain response measures presumably related to difficulties in ego integration were also determined to have a higher incidence in the homosexual group. Lowered Goodenough

Figure Drawing scores and more frequent human-animal combinations in one Rorschach percept could be indicative of disturbances in the organization of the self.

A tendency for more of the homosexual women to display a disparaging attitude toward men in Rorschach percepts was suggested, at the .05 level of significance. A hostile-fearful conception of the male role was no more dominant in Rorschach images of the homosexual than of the heterosexual.

A stronger dependency orientation in homosexual women was hypothesized but found no stable support in the results. Failure to find any consistent patterns of response associated with confusion in sexual role must be conceded. The usual Rorschach and Figure Drawing Criteria were equally unproductive in this regard.

Negative findings attest only to a failure to refute the null hypotheses through the methods employed in this study. In the analysis of results some suggestive trends and characteristics were identified and described which may provide guidance to more refined research.

The failure to find many clear-cut differences which are consistent for the majority of the group would suggest that homosexuality is not a clinical entity. On the basis of present indications it would seem unwise to make generalizations about female homosexuals as a group or to assume that homosexuality is necessarily associated with gross personality disturbance. The general absence of dramatic differences between the performance of the homosexuals and heterosexuals on projective tests should influence the conception of homosexuality as necessarily associated with deep regression and concordant limitations in personality functioning. In different areas a tendency to more seriously disturbed response was noted in the homosexual group, but would occur in only a few cases, usually less than one-third of the group. The impression is that the

homosexual group, selected originally as making an adequate adjustment in society aside from their homosexuality, nevertheless contained a few more individuals who give deviant and disturbed response in projective tests than were found in the heterosexual group. One could not describe the majority of the homosexual women as more poorly adjusted on the basis of their projective test performance.

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Prognostic Value of the Rorschach in a Child Guidance Clinic

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The perennial problem of too many applicants for therapy and too few therapists is particularly acute in a public clinic with unlimited diagnostic intake. The Institute for Juvenile Research, like many other psychiatric clinics, has tried to cope with this problem over the years by screening applicants for therapy on the basis of a multi-disciplinary assessment of their treatability. The present study was designed to evaluate the efficiency of one of the many assessment procedures employed, namely, the prognostic rating by the psychologists who utilized the Rorschach primarily along with certain supplementary case material.

Knopf (1955) summarized the status of the Rorschach as a prognostic instrument as follows:

Recent studies employing the Rorschach to predict the outcome of psychotherapy have been essentially negative. More specifically, changes in adjustment ratings at the conclusion of psychotherapy were not significantly correlated with Rorschach changes; Rorschach indices alleged to have prognostic significance in earlier studies failed to have predictive significance when these were applied to new samples; Rorschach interpreters were not able to predict the outcome of psychotherapy on the basis of their total Rorschach evaluation; and outcome groups were not discriminated by any single Rorschach score, ratio, or patterns of scores.

Windle (1952) and Zubin (1954) reached similar conclusions after surveying the literature regarding the prognostic value of the Rorschach. Windle (1952) states: "A considerable number of the positive claims cited in the literature appear to be due to an uncritical attitude concerning validity. Many others may easily be due primarily to chance. When both of these variables are controlled, very few positive results remain." Both

Windle and Knopf suggest that future prognostic studies should involve a more specific delineation and measurement of relevant variables rather than a naive expectation that some aspects of Rorschach test performance will necessarily predict success (defined in gross, general terms) in therapy (defined in equally gross, general terms) for a heterogeneous population of patients varying in type, degree, and chronicity of disturbance. Clinicians are eager to see the identification of precise and reliable associations between clusters of specific prognostic and therapy variables, for example, an association between a certain type of Rorschach experience balance and a differential response to various types of therapy. However, pending the validation of these complex relationships between subunits within larger variables, most service settings continue to use the Rorschach to make evaluations and decisions in terms of gross, general variables such as "treatability, improvement, and psychotherapy."

The present study was intended to evaluate the prognostic utility of the Rorschach in a child guidance clinic where the instrument is used in the manner just described: that is, qualitative and quantitative aspects of the protocol are used to provide a general prognosis for a course of treatment whose nature is specified in broad categories such as "supportive psychoanalytically oriented" or "interpretive psychoanalytically oriented." While every effort was made to utilize sound principles of research design in the study, the data were deliberately limited to the protocols, ratings, evaluations, etc., normally obtained in the routine operation of the clinic.

The use of the Rorschach as a prognostic instrument in child guidance clinics has been discussed by several

writers. (Krugman, 1941; Anderson & Higham (1956). A survey by Anderson and Higham (1956) revealed that the Rorschach is widely used both as a diagnostic and a prognostic instrument in child guidance clinics. Approximately half of the 107 clinics polled by these authors reported giving the Rorschach to about half of child patients; 19% gave it to nearly all children seen; and 17% gave it to less than 10% of the children seen.

Siegel (1948) studied 16 boys and 10 girls ranging in age from 10 years 5 months to 17 years 9 months and ranging in I.Q. from 83 to 138. These children had been referred to the Jewish Board of Guardians for a variety of problems: their diagnoses ranged from primary behavior disorder to incipient schizophrenia. The children were given the Rorschach before or in the initial period of therapy and were retested a year later. Ratings of clinical improvement were made on a four-point scale. The nature and direction of change in various Rorschach factors for the improved as compared to the unimproved group were used to arrive at favorable and unfavorable prognostic signs. Since no conventional statistics were employed to evaluate the discriminating power of the factors whose incidence differed in the two groups and since the relevant raw data were not included in Siegel's presentation, the significance and implications of her prognostic findings cannot really be evaluated. However, on the basis of the method of analysis she employed, she concluded that the following eight signs were associated with improvement: higher refusal rate, more FC, higher W%, occurrence of Fc, H, O, acceptable level of F+%, and a favorable response to testing the limits. The following four signs were associated with shading shock, O-, CF-, and CF. Siegel recommended further studies with larger samples, but concluded that the Rorschach was a promising prognostic instrument.

Salfield (1951) studied 66 child guidance cases who were subsequently treated mainly by psychoanalytically oriented psychotherapy. Included among the 66 cases were not only directly treated children, but also two adults and an unspecified number of children who were treated only indirectly through their parents. After the Rorschach had been administered to the 66 patients, a prognosis was given on a three-point scale. The results of treatment were evaluated on a five-point scale ranging from "unchanged" to "cured". A comparison of the prognostic ratings and the treatment outcomes revealed a high correspondence between prognosis and outcome in 63% of the cases, a less close correspondence in 32% of the cases, and a lack of correspondence in 5% of the cases. A product moment r of .71 was reported for the correlation between prognosis and outcome (with both apparently being rated on a three-point scale for the purposes of this computation). While Salfield did not present statistical data regarding the prognostic power of individual Rorschach signs, he summarized his impressions regarding individual Rorschach factors in the following words: "The following signs, appraised in isolation, appeared among the most significant ones: R; Rejections; F per cent; F+%; FK+ F+ Fc; C; Sum C; S; M; W per cent; M; Sum C; r/R; FM + m/Fc+c+C'; approach, succession, shock, intellectual level and efficiency (7. p. 85)." On the basis of his findings, Salfield indicated that he had found the Rorschach to be a valuable prognostic instrument.

Like Siegel and Salfield, the present author compared therapy outcome in groups of patients who had been given the Rorschach prior to treatment. The present study will be reported in two sections: 1) the original investigation, and 2) the cross-validation study.

ORIGINAL SUBJECTS

The original sample of 49 subjects included every clinic case which met

TABLE I. Descriptive Information Regarding Original Group of 49 Subjects

Variable	Improved Group N = 29	Unimproved Group N = 20
Mean age	12 yrs. 5 mos.	12 yrs. 0 mos.
Age range		
5-9 yrs.	8 (28%)	5 (25%)
10-13 yrs.	11 (38%)	9 (45%)
14-17 yrs.	10 (34%)	6 (30%)
Sex		
Male	13 (45%)	13 (65%)
Female	16 (55%)	7 (35%)
Intelligence		
Dull	5 (17%)	2 (10%)
Average	18 (62%)	13 (65%)
Superior	6 (21%)	5 (25%)
Mean interval between Rorschach and beginning of therapy	7 mos.	7 mos.
Duration of therapy		
2-19 interviews	11 (38%)	13 (65%)
20-49 interviews	12 (41%)	7 (35%)
50-150 interviews	6 (21%)	0 (0%)
Parent also treated		
Yes	23 (79%)	13 (65%)
No	6 (21%)	7 (35%)
Primary problem		
Learning	1.0 (3%)	0 (0%)
Somatic dysfunction	2.5 (9%)	1.0 (5%)
Socially unacceptable behavior	5.0 (17%)	4.0 (21%)
Personality Difficulty	20.5 (71%)	14.0 (74%)
No Information		1.0

Note: For those items with instances of "no information", percentages were computed on the basis of all cases for which information was available. Chi-square tests for the significance of the difference between proportions yielded no significant differences for any variable except "duration of therapy" (chi-square, 6.034; $P < .05$).

the following criteria: 1) child was given a Rorschach prior to or at the beginning of psychotherapy at the Institute 2) child was tested and treated between the years of 1951 when the current IBM card method for case data was initiated at the clinic and 1957 when the original investigation was concluded 3) the therapist's post-therapy rating of "improved" or "unimproved" was available 4) the child's case record and original Rorschach protocol were available, and 5) the child's Rorschach was scored by the Beck method (3). Approximately 60% of all the children given Rorschachs and treated between 1951 and 1957 met all the criteria outlined. The 49 cases which met the criteria were divided into an "Improved" and an "Unimproved" group on the basis of the therapists' ratings. Descriptive information regarding these two sub-

groups of the original sample is contained in Table I.

The age ranges recorded in Table I are as of the date the Rorschach was administered. The psychometric ratings were obtained from a large variety of group and individual tests of intelligence: some were given at the same time as the Rorschach and others were given some time earlier or later. In view of the essential lack of comparability between scores on such varied instruments, only descriptive categories of intelligence are reported: Dull (I.Q. below 90), Average (I.Q. 90-119), and Superior (I.Q. 120 or above). The primary problem area was recorded from the examining psychiatrist's evaluation of the case. Decimals appear because some psychiatrists checked two or three "primary" problems. In such cases, the two or three problems were given frac-

tional values so that the total number of primary problems would not exceed the total number of cases. Information as to whether or not the child's parent was treated is included in Table I in order to establish that the Improved and Unimproved groups were at least generally similar in regard to the important variable of parental willingness to participate in treatment. As Anderson and Higham state: "... whether or not a particular child is a good therapeutic risk does not rest entirely on factors within the child himself. . . . The need for co-operation of the parents is a factor that often makes the selection of cases in a child guidance clinic a much more complicated matter than it is in a clinic treating only adults" (2, p. 193). The Improved and Unimproved groups are actually quite comparable in regard to nearly all of the background and actuarial variables reported in Table I. Chi square tests for the significance of the difference between proportions yielded no significant differences for any variable evaluated except "duration of therapy" on which the Improved and Unimproved groups quite obviously differ. The fact that they differ in this respect does not mean, however, that the groups cannot legitimately be compared in regard to therapy outcome. Instead, the difference in regard to duration of therapy can be regarded as simply one more result of the same variable of "treatability" which we are trying to assess when we attempt to predict therapy outcome. The treatable patients manifest their treatability by staying in therapy long enough for changes to occur and by eventually being rated as improved. The untreatable patients often manifest their untreatability by defecting from treatment very early in the process before any improvement could be brought about. For example, 10 of the 13 unimproved patients listed in Table I as having had only 2-19 interviews dropped out of therapy against the advice of their

therapists. Since the subjects of this study are children, one might object that defection from treatment might not reflect relative untreatability on the part of the child, but a parental decision to pull the child out of therapy. Actually, a review of the case records of the defectors in the original sample of this study revealed that they were all adolescents who could come to the clinic on their own were they so motivated. More often than not, the parent was distressed by the adolescent's failure to accept the treatment the parent had urged the clinic to provide. Thus for the purposes of this study, it seems justified to conclude that the difference in length of therapy for the Improved as compared with the Unimproved group does not preclude evaluating the success with which they can be discriminated by prognostic variables.

The therapy provided for the subjects of this study was generally psychoanalytically oriented: children below the age of eight were usually treated by play therapy, while the older children were treated by interview techniques.

PROCEDURE

The 49 Rorschachs in the original sample were administered and scored by 17 psychologists of varying levels of experience; 14 Rorschachs were given and interpreted by trainees, 24 by staff members with two to five years of experience, and 11 by staff members with over five years of experience. The Rorschachs were administered as part of a battery of diagnostic tests which might include other projective tests and/or intelligence tests. A social history and extensive referral information were available to the psychologist. After interpreting the Rorschach and any other tests administered and after integrating these test findings with the other material available regarding the case, the psychologist was required to make two summary evaluations: 1) degree of disturbance on a four-point scale rang-

ing from "minimal" to "severe" and 2) prognosis in therapy on a four point scale ranging from "poor" to "favorable." The psychologist's prognostic ratings were selected as the major index of his predictive skill for the purposes of this study. There is considerable discussion in the literature regarding the choice of an appropriate Rorschach unit of analysis. Several writers have criticized the atomistic sign approaches on the basis that they do not allow for the global and configurational analysis of the Rorschach protocol. These writers have indicated that the clinician's skill in integrating findings on many levels is as important in Rorschach interpretation as any objective index that can be derived from scoring variables (Ainsworth, 1954, pp. 463-465; Zubin, 1954, p. 312). It was the present author's belief that a really adequate test of the Rorschach's utility in a clinic setting should involve the use of a prognostic index of the type that a practicing clinician characteristically uses: in short, an index derived by integrating Rorschach findings with all other material available regarding the case. In the present study, the general prognostic ratings made by the psychologist were dichotomized into the categories "favorable" and "unfavorable". The distribution of these dichotomized ratings was compared in the Improved and the Unimproved therapy outcome groups. The dichotomized prognostic ratings were not, strictly speaking, Rorschach ratings, but ratings to which the Rorschach was a major, and the only constant, contributor.

Unfortunately, no data regarding reliability or validity are available for any of the ratings employed in this study. The ratings of prognosis were made by individual examiners and the ratings defining the Improved and the Unimproved therapy outcome groups were made by individual therapists. It was hoped that compressing the four-point scales into dichotomies would give discriminations suf-

ficiently gross that they could be considered reasonably reliable. It was not feasible to have new independent ratings made for several reasons, among which was the fact that the data needed for such ratings was often not available in the case record because of incomplete dictation by examiners or therapists. It was therefore decided that the ratings available would be used with the understanding that any findings obtained would be generalizable only to situations in which similar types of ratings were employed.

In order that the predictive value of the Rorschach per se might be assessed by a method independent of clinical judgment and other case data, the Improved and Unimproved therapy outcome groups were also compared by means of 13 of the 17 Davidson (1950) adjustment signs. The two signs involving color shock and shading shock respectively were omitted because they involve subjective judgment and purely objective indices were desired. The two signs involving FM and F% respectively were omitted because the records used in this study were scored by the Beck method: FM was not scored and the scoring of F% was on a different basis than that used to obtain the optimal range listed in the relevant Davidson sign. All of the other Davidson signs were restated in terms of Beck scoring: e.g. sign 3 regarding differential shading was stated in terms of FY, VF, TF, etc. responses. Sign 2 (M, 3 or more) was altered to read M, 1 or more, since the lower figure was considered more appropriate for a population of clinic children. The Davidson signs were evaluated by the present author on the basis of the Rorschach scoring done by the original examiners.

RESULTS

Prognostic ratings and therapy outcome

The Improved and the Unimproved therapy outcome groups were not dif-

ferentiated by means of the prognostic ratings made by the psychologist on the basis of the Rorschach and other projective and case data (chi square 0, $p > .05$). Of the 26 Improved patients for whom a prognostic rating was available, 17 had been given a favorable prognosis by the psychologist. However, 13 of the 17 Unimproved patients for whom a rating was available had also been given a favorable prognosis by the psychologist. Even when one considers only the cases with twenty or more interviews, the Improved and Unimproved Groups are still not successfully discriminated. Of 15 Improved patients rated, only 9 were given a favorable prognosis, while 6 of the 7 Unimproved patients rated were given a favorable prognosis. Thus the failure in prognostication cannot be explained on the basis that the Unimproved group contained many "false positives" which could be attributed chiefly to the extremely short duration of therapy in this group.

One cannot conclude, however, that the psychologist's prognostic ratings had absolutely no validity: at the Institute, selection of cases for therapy is based partly on the prognostic rating by the psychologist. In order to document this aspect of the treatment case selection procedure, cases in the current sample were compared with control samples of consecutive treated and consecutive diagnostic cases, the control samples having been established some years previous to this study as a baseline for future research. When the 43 cases in this sample for whom a prognosis was available were compared with the control sample of 74 consecutive treated cases, no significant difference in the distribution of prognostic ratings was found (chi square .64, $p > .05$). However, while the cases used in this current study are quite representative of the treatment caseload at the Institute as regards distribution of prognostic ratings, both the current sample and the control sample of consecu-

tive treated cases are highly selected on the prognosis variable in comparison with the total number of cases diagnosed at the Institute. While only 41% of the consecutive cases diagnosed at the clinic are assigned a favorable prognosis in therapy, about 72% of those actually selected for treatment have such a prognosis. When the combined current and control samples of treated cases were compared with a control sample of 310 consecutive cases diagnosed at the Institute in regard to distribution of prognostic ratings, a highly significant chi square of 32.29 ($p < .001$) was obtained. Thus, it is possible that the psychologist's prognostic ratings do weed out some of the most unpromising therapy risks. The current finding of no significant relationship between prognostic ratings and therapy outcome should therefore be interpreted as indicating that the psychologist cannot predict with better-than-chance accuracy the outcome of those child patients actually selected for therapy, though he may or may not have some success in eliminating the worst therapy risks by his prognostic ratings.

Davidson adjustment signs and therapy outcome

The results obtained by comparing the Improved and Unimproved groups by means of the Davidson adjustment signs are contained in Table II. The Improved group had a mean of 7.24 adjustment signs, while the Unimproved group had a mean of 6.60 signs. The difference between the two means is not statistically significant (t -1.07, $p > .05$). In other words, neither the global clinical evaluation of the Rorschach in connection with other case data nor a quantitative sign list approach discriminated reliably between the Improved and Unimproved treated groups.

Since there was a possibility that individual Davidson signs might discriminate between the two groups even though total number of signs as

Sample of 53 Subjects

	Improved Group	N=37	Unimproved Groups	N=16
Variable				
Mean age	11 yrs. 7 mos.		11 yrs. 11 mos.	
Age range	5-9 yrs.			
Sex				
Female	13 (35%)		5 (31%)	
Male	14 (38%)		6 (38%)	
Intelligence	10 (27%)		5 (31%)	
Dull	15 (41%)		7 (44%)	
Average	22 (59%)		9 (56%)	
Superior	5 (15%)		2 (12%)	
No information	21 (64%)		13 (81%)	
Mean interval between Rorschach	7 (21%)		1 (6%)	
and beginning of therapy	4			
Duration of therapy	9 (24%)	7 mos.	6 mos.	
2-19 interviews	11 (30%)		11 (69%)	
50-150 interviews	14 (38%)		4 (25%)	
Over 150 interviews	3 (8%)		1 (6%)	
Parent also treated	26 (70%)		13 (81%)	
Yes	11 (30%)		3 (19%)	
No	4 (11%)		5 (30%)	
Somatic Dysfunction	4 (11%)		3.5 (23%)	
Socially Unacceptable behavior	4 (11%)		5.0 (33%)	
Personality Difficulty	23 (66%)		6.0 (40%)	
No information	2		1.0	

Note: For those items with instances of "no information," percentages were computed on the basis of all cases for which information was available.

Thus, the original sample contains no cases treated for over 150 interviews (see Table I), while the cross-validation sample contains six such cases. While only 12% of the original sample had 50 or more interviews, 34% of the cross-validation sample had that number. The difference between the two samples in regard to percentage of cases with 50 or more interviews is significant at the .05 level (chi square of 6.69). This significant difference between the two samples does not preclude use of the second sample as a cross-validation group since in both samples the cases continuing treatment after 50 interviews were the improving cases. The problem of using the Rorschach for the prediction of therapy outcome is similar in both the original and the cross-validation

TABLE II. Incidence of Davidson Adjustment Signs in Improved and Unimproved Treated Groups

Davidson Adjustment Sign	Frequency in Improved Group	Frequency in Unimproved Group	Chi-Square
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2. Sum C > no. of Y, V, and T responses	26	12	4.40*
3. Sum C > no. of Y, V, and T responses	17	6	2.83
4. Dd + S, 10% or less	18	6	3.67
5. P, 4 or more, but less than 30% R	12	10	.09
6. R, more than 20	16	13	1.24
7. FC > CF or FC = CF	17	7	1.78
8. EC, 2 or more	10	3	1.15
9. No pure C	19	16	.61
10. VIII, IX, X per cent is 40-60%	10	9	.20
11. FY + FV + FT = 2 or more	13	9	0
12. W:M = 2:1 (approx.)	5	4	0
13. A%, 50 or less	19	13	0
14. No refusals	28	20	1.07
Mean No. of Signs per Case	7.24	6.60	
S.D.	2.13	1.85	

*Significant at .05 level.

a score did not, the author carried out a detailed analysis of the data on a sign by sign basis. The results of this analysis are also contained in Table II. Only Sign 2 (M, 1 or more) differentiated between the Improved and the Unimproved therapy outcome groups at a better-than-chance level. It was recognized that this one significant finding might be the result of chance since the probability of getting one significant statistic out of 13 by pure chance is .49 (10). However, even this one positive finding in the midst of negative results seemed worth an attempt at cross-validation which will be presented in a later section of this paper.

Degree of disturbance and therapy outcome

When this prognostic study was planned, the author did not intend to use the psychologists' ratings of the patient's degree of disturbance. However, when the prognostic ratings failed to discriminate between the Improved and Unimproved therapy outcome groups, the author wondered whether the psychologist might not be making some evaluation with predictive value even though he failed when he deliberately set out to progn-

nosticate. In order to test this hypothesis, the degree of disturbance ratings were dichotomized into "severe" and "mild-to-moderate". The distribution of these dichotomized ratings was then compared in the Improved and Unimproved therapy outcome groups. Only five of the 27 Unimproved cases, but 11 of the 19 Improved cases, had pre-therapy ratings of severe disturbance. A significant chi-square of 5.99 ($P < .05$) was obtained. That is, the cases rated as only mildly or moderately disturbed when evaluated prior to therapy were more likely to be rated later on as having improved in therapy than were cases initially rated as severely disturbed. It was decided that this finding should also be cross-validated before any efforts were made to account for its occurrence.

Cross-Validation Subjects

The cross-validation sample of 53 subjects included every clinic case who met the criteria outlined for the original sample except that criterion 2 was changed to read: child was tested and treated either prior to 1951 or after 1957, that is, either before or after the period during which the original sample was drawn. The

samples, the problem being essentially: will any given case have shown enough improvement by 50 interviews to be terminated eventually as improved. Even when long term treatment was offered at the Institute, cases showing no improvement after 50 weekly interviews tended to be closed after the first annual administrative review of the course of treatment.

Since no other relevant systematic changes were made in Institute policy regarding intake or treatment during the decade 1949-1959, no other statistical comparisons were made between the original and the cross-validation samples. Variations between them were accepted as chance variations in small samples drawn from a large universe.

PROCEDURE

The 53 Rorschachs in the cross-validation sample were administered and scored by 20 psychologists of varying levels of experience: 13 Rorschachs were given and interpreted by trainees, 28 by staff members with two to five years of experience, and 12 by staff members with over five years of experience. The distribution of levels of experience of the examiners is almost identical in the original and the cross-validation samples. The cross-validation study was carried out in order to test whether the two positive findings of the original study could be replicated, that is, whether a mild-to-moderate degree of disturb-

ance as evaluated by the psychologist and the production of at least one M on the Rorschach could again be shown to have a statistically significant relationship to improvement in therapy. The cross-validation Rorschachs were simply coded as containing or lacking at least one M response. As in the original investigation, the psychologists' ratings of degree of disturbance were dichotomized and the distribution of dichotomized ratings was compared in the Improved and Unimproved therapy outcome groups. Just as a matter of interest, the psychologist's prognostic ratings were also dichotomized and their distribution was compared in the Improved and the Unimproved therapy outcome groups of the cross-validation sample. Since many of the cases included in the cross-validation sample preceded the initiation of routine rating of degree of disturbance and prognosis by the psychologist, about half of the cross-validation cases lacked one or the other of these ratings.

RESULTS

Neither of the significant relationships found in the original study could be replicated in the cross-validation sample. The results of the cross-validation study are presented in Table IV. Neither production of an M response nor a mild-to-moderate degree of disturbance differentiated the Improved and the Unimproved therapy outcome groups. The prognostic rating by the psychologist based on

TABLE IV. Relationship of Rorschach M and Degree of Disturbance to Therapy Outcome in Cross-validation Sample

Variable	Improved Group N=37	Unimproved Group N=16	Chi-Square
Modified Davidson Adjustment Sign 2			
1 or more M present			0
No M	29	12	
Degree of disturbance	8	4	
Severe			.005
Mild to moderate	8	2	
Prognostic rating by psychologist	15	6	
Favorable			1.14
Unfavorable	17	6	
	3	4	

Note: None of the 3 chi-squares listed in the table are statistically significant.

the Rorschach plus other projective and case data also failed to discriminate between outcome groups. This latter negative finding was consistent with the previous negative finding in the original sample. The reader may wonder whether the prognostic signs identified in the original sample failed when applied to the cross-validation sample merely because so many of the latter sample had long-term treatment. Perhaps even cases which lacked the favorable prognostic signs could be treated successfully when long-term therapy was available. Inspection of Table IV reveals that this explanation does not account for the findings. The prognostic signs failed to cross-validate as much because they *did* occur in the *unsuccessful* cases as because they did not occur in the *successful* ones. The present author would conclude therefore that the few positive findings in the original study were the result of chance.

DISCUSSION

The results of the original and cross-validation studies indicate that the Rorschach has not been an efficient prognostic instrument as it has been used at the Institute. Neither a global configuration approach nor a sign approach have provided a dependable evaluation of the treatability of patients selected for psychoanalytically oriented psychotherapy. The findings in this study are consistent with the summaries of Knopf (1956) and Windle (1952) regarding the dubious status of the Rorschach as a prognostic instrument. However, the conclusions of this study are at variance with the enthusiastic endorsement of the Rorschach as a prognostic instrument by Siegel (1948) and Salfeld (1951). Siegel, whose study was summarized in the earlier part of this paper, did not present her data in conventional statistical form; therefore, one cannot evaluate whether she found more statistically significant relationships between therapy outcome and Rorschach variables

than were found in the present study. Salfeld's data are quite comparable to the data in this paper. It is not really clear why his findings were so remarkably different than those obtained in the present study. However, a few hypotheses suggest themselves. First, the discrepancy in findings might be the result of a differential in skill and experience on the part of the Institute staff as compared with Salfeld. This hypothesis would seem more plausible if the present study had revealed a significant differential in the prognostic success of the experienced as compared with the inexperienced psychologists. Actually, however, no such finding was obtained. A total of 73 cases in the combined original and cross-validation samples of this study had prognostic ratings available. Of these 73 cases, 14 were rated by senior psychologists with over five years of experience and 59 by junior staff members and trainees. When frequency of accurate prognostication was compared for the senior psychologists versus the trainees and junior psychologists, a statistically insignificant chi square of 1.11 ($p > .05$) was obtained. One cannot, however, discount the factor of interaction between examiner and test. Sines (1959) has shown that individual clinicians provided with the same set of diagnostic data vary in their ability to assess personality with any given test. Since data regarding Salfeld's background and experience are lacking, one cannot dismiss the possibility that his special skill in using the Rorschach enables him to obtain findings which most clinicians cannot replicate.

A second hypothesis would relate the discrepancy in findings to the fact that Salfeld's study comes closer to eliminating some of the factors that Knopf (1956, p. 804) suggests are obstacles in the way of successful prediction. Salfeld presumably gave all of his Rorschachs himself over a period of time during which he was gradually getting increasingly accurate

information regarding both the situation to which he was predicting and the success of his prognostic attempts. Therefore, the error variance contributed by a multiplicity of examiners predicting with no feedback to a treatment situation regarding which they had little definite information should have been at a minimum in Salfeld's study.

A third approach would be to attribute the discrepancy in findings to the fact that case data and other test material available to the psychologists in this study introduced a source of uncontrolled variability not present in the global ratings made by Salfeld on the basis of Rorschach data alone. The general prognostic ratings used in the present study can be considered "Rorschach ratings" only in the sense that each case was given a Rorschach as the major projective. However, data from other sources contributed significant variance to the prognostic ratings though no other single technique was used in every case.

Admittedly, these *ex post facto* attempts at reconciliation of results do not appear entirely satisfactory. What is needed, of course, is further documentation of the experience of many clinic settings which use the Rorschach in establishing prognosis. However, on the basis of all the findings available up to now, it would appear that the Rorschach prognosticates no more successfully than other tests, but takes much longer to give and interpret. It would therefore be particularly helpful if clinics would experiment with a variety of other possible prognostic tests in addition to the Rorschach. Knopf (1956, p. 804) has ably presented the difficulties inherent in using any test to predict the outcome of therapy when: 1) so little is known of the relative contribution of patient variables capable of reflection in a test as compared with the contribution of therapist and environmental variables, and 2) problems in defining and evaluating the criterion of success in therapy remain unsolved. Windle's

(1952) survey indicates that none of the commonly used psychological tests have been shown to have unequivocal validity as prognostic instruments. However, as Knopf observes, if the obstacles in the way of using tests as predictors can be overcome, the benefits to the clinician would be enormous. Carefully controlled predictive studies in a number of clinical installations should serve to hasten the solution of at least some of the problems inherent in prediction of the outcome of therapy.

SUMMARY

This study was undertaken in order to evaluate the prognostic value of the Rorschach in a child guidance clinic setting. The subjects for the original investigation were 49 children between the ages of five and 17 who were given pre-therapy Rorschachs and then treated by mainly psychoanalytically oriented therapy at the Institute for Juvenile Research. The children were divided into Improved and Unimproved therapy outcome groups on the basis of their therapists' ratings at the end of treatment. Neither the global prognostic rating made by the psychologist on the basis of the Rorschach and other case data nor the total scores on the Davidson adjustment sign list differentiated the two groups at a better-than-chance level of accuracy. However, when the individual Davidson signs were evaluated the modified sign 2 (M, 1 or more) was found to discriminate at the .05 level of statistical significance. The psychologists' dichotomized ratings of degree of disturbance were also found to discriminate at the same level of significance.

At attempt was made to cross-validate these findings on a sample of 53 children between the ages of five and 17 who were diagnosed and treated at the same clinic either earlier or later than the period during which the original investigation was conducted. Neither of the significant relationships found in the original

study could be replicated in the cross-validation sample: that is, neither production of M nor a mild-to-moderate degree of disturbance differentiated the Improved from the Unimproved therapy outcome group. The author therefore concluded that the few positive findings obtained in the original study were the result of chance. The findings were discussed and compared with the results of previous investigators. The results of the present study were seen as being consistent with the conclusions of Windle (1952) and Knopf (1956) to the effect that the Rorschach has dubious value as a prognostic instrument. The results of the present study were also interpreted as pointing up the need for more widespread clinical experimentation with a variety of possible prognostic instruments.

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Rorschach Content, Personality, and Popularity

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Hermann Rorschach (1943, pp. 16-18) subsumed the terms perception and interpretation under the more general term of apperception. He believed there were three factors involved in the apperceptive process: a sensory stimulation in the present, a mental engram (i. e., an "apperceptive mass"), and an act of associating one to the other—presumably the former to the latter. When this association occurs smoothly, and an engram can be readily integrated with a sensation, it is referred to as perception; when the association is not smooth, and the individual consciously realizes that his memory pictures are not perfectly identical to the sensory stimulation now at hand, it is referred to as interpretation. Perception may shade into or be confused with interpretation by an individual because of peculiarities in his associative processes—resulting from, e.g., brain injury — or because of his mood variations or personality characteristics.

One can accept this analysis of perception, with its cognitive component, and yet fail to appreciate the emphasis Rorschach placed on the structural aspects of perception in his inkblot test. His basic theory does not *necessarily* generate the kind of structural emphasis his thinking took. For example, he might have begun from the theoretical position that a kind of isomorphism exists between the method in which a person organizes a percept and the method in which his personality is organized. There was precedence for this theoretical position in the work of the Gestalt School, and although he seems to have favored a view somewhat like this, he did not actually formulate such a position. He seems to have arrived at his structural

bias through his attempts to find an indirect and covert method of diagnosis. The obvious way in which to do this is to strip perceptual data of "what" is seen and investigate instead "how" things are seen. This was an exciting hypothesis and he approached his study with admirable scientific tentativeness, terming it an experiment.

The final word has probably not been said concerning the actual success of his experiment, since it is not entirely clear how the test is to be evaluated. Zubin (1954) contends that, as an experimental device to be used in predicting behavior, the Rorschach scoring determinants have failed, and that structural components of perception in general lack the reliability to be considered valid predictors (Zubin, Eron, & Sultan, 1956). However, as a kind of controlled interview, taking into account contextual content responses, Zubin feels that the inkblot test can be a useful clinical tool. The tendency for psychologists to ignore content in favor of process study has been underscored by McClelland (1955). The research findings on structural aspects of the inkblot test have been discouraging (Baughman, 1958), whereas recent content approaches have shown promise (Elizur, 1949; Zubin et al., 1956). Such methods have uniformly reported acceptable reliabilities, but have had mixed success in predicting behavior (Gluck, 1955; Gorlow, Zimmet, & Fine, 1952); however, research in this area is still very limited. The important fact is that one can utilize a content approach to the inkblot test and still be consistent with Rorschach's most basic views concerning apperception. Indeed, as is well

known, he came to recognize the potential usefulness of content per se, even though originally he tied it closely to the form which a percept took (Rorschach, 1943, p. 207). If one carefully examines the procedure of Rorschach testing it is soon apparent that perceiving as *actually measured* adds at least one more factor to the original three: i.e., the factor of communication. The *S* must transmit his percept to the *E*. Considering the known unreliability of testimony, and the phenomenon of secondary elaboration—not to mention subliminal possibilities—how realistic is it to expect an *S* during the inquiry to state validly whether he used the whole or part of a blot, the inner or outer detail, etc., in arriving at his percept? The fact that an *S* states "Two standing monkeys" rather than "Two monkeys" may tell us more about his verbal pattern of communication than his actual perception — although many structuralists would find this cause for great concern, as to just what determinants were in operation within these "two" preceptions. Levy (1955) has presented evidence in support of the view that purely verbal elaborations of content essentially determine the nature of the scores to be assigned a response.

The present research was designed to test the hypothesis that group Rorschach content can be related to independent measures of personality and popularity.¹ Subjects of the study were elementary school children. No attempt was made to examine the location or presumed determinants of a response. Following Rorschach's view of perception, the position taken is that past experience determines in part an individual's present interpretative proclivity, and that certain personality types will report certain contents in common when asked to view

an amorphous inkblot stimulus. For that matter, they can be expected to report similar dreams, TAT themes, etc. This theoretical position also continues in the tradition of Lindner (1952), who was among the first to suggest that inkblot content and dream content could be roughly equated. It is the authors' belief that such consistencies in personal expression and interpretation are cultural manifestations of common experiences and common concerns, incidentally or directly learned in the past and brought to light under proper conditions or instructions in the present. This position has been adequately elaborated elsewhere (Rychlak, 1959; Rychlak & Guinouard, in press).

METHOD

Subjects

Two classrooms from each of the grade levels six, seven and eight were randomly chosen for study. A total of 166 young people (80 girls, 86 boys) made up the final sample, representing about one third of the enrollment for these grade levels in the school system. They ranged in CA from 11 to approximately 14 years. In general, the children had middle class backgrounds. Pretesting and reliability data were also gathered on fifth graders, but these *Ss* were not included in the final statistical analysis because the personality test was not suitable for them.

Rorschach Measurement

The Harrower Group Rorschach slides (Psych. Corp, 1959) were used, although experimental instructions and procedures were tailored to suit the specific aims of this investigation. The test was administered in pretesting to approximately 60 children in the age range of interest, and a scoring system then devised using their responses as examples. In all, 10 categories were scored for each *S*: an absolute total of responses (*R*), and nine content classifications expressed as percentages of *R*. No account was taken of the determinant or the location of

¹The authors would like to express their appreciation to the principals and teachers of the Pullman elementary schools for their cooperation in arranging *Ss* and testing times. Thanks are also extended to Mrs. Sharon Johnson for clerical assistance.

a response. The decision to use percentage of R scores, as opposed to absolute incidence of a content in a given protocol, stemmed from common sense evaluation and the findings of earlier researches which suggested that this was the more reliable and valid procedure (Altus, 1948; Thompson, 1950).

The content categories were not discrete dimensions; consequently, only certain of them can be intercorrelated. Based on the assumption that human, animal, and tension contents were most directly relevant to the purpose of the study, principles of scoring and a manual were devised. Children see a good deal of animal content in inkblots, and it is frequently taken as a sign of immaturity as age increases. Human content is often interpreted as an indicant of actual or potentially good social adjustment. Tension content is usually believed to be a sign of anxiety or poor adjustment. A description of the experimental variables, with appropriate examples drawn from the pretesting protocols follows:

Entire Human: responses making reference to an entire person, interpreted broadly to mean adult, child, either sex, caricatures of humans (clowns, supernatural characters), and any reproduction (paintings, photographs) of these figures. Indeed, there were no distinctions drawn between so-called reproductive perceptions and regular perceptions in any of the content categories listed below. The response "living things" was not scored under any category. Note that positive and negative interaction responses between humans were included in this category (ref. below).

Examples:

Two witch doctors.
Two people, with a big cooking pot between them.
A painting of two Indians on horseback.

Human Detail: responses making reference to internal or external parts

of a human. Subjects were instructed while taking the test to make a distinction between animal and human when they saw something in the blot (like an "arm") which could refer to either figure. If no such distinction was made, the response was taken to mean a human detail. Clothing was not scored unless S referred to a specific person, thereby suggesting a human association.

Examples:

Liberace's jacket.
A face.
A man's insides.

Entire Animal: responses making reference to an entire animal, interpreted to mean any of the usual animals known by children, plus comic strip characters. Positive and negative interactions between animals were included in this category (ref. below).

Examples:

Mickey Mouse.
An ocean scene, with crabs.
Mad dog.

Animal Detail: responses making reference to internal or external parts of an animal. When the referent was unclear (e.g., "An eye") a response was scored as human detail. Clothes responses were not scored, unless referring to specific animals. Remnants of animals were scored, so long as their original nature was discernible in the response (i.e., "Leather" was not scored).

Example:

Donald Duck's cap.
Bear skin rug.
Dog's stomach.

Entire Human + Entire Animal: since it is difficult to state whether children see animals in the inkblot, or anthropomorphized humans, it was decided that a total of this sort would prove interesting.

Positive Interaction: responses suggesting a cooperative or at least benign endeavor between persons or animals.

even though the act which they are performing may be anti-social in nature. The response must suggest action; merely seeing "two people" was not scored under this category.

Example:

Two men breaking into a bank.
Some rats doing the cha-cha.
Women cooking and talking.

Negative Interaction: responses reflecting uncooperative or destructive interpersonal or interanimal relations. The guiding principle was to look for anger or hostility, fear or anxiety, and frustration in the interaction; because of this, these contents were also included under tension below.

Examples:

A witch, scaring a little girl.
Two lizards, tearing up a butterfly.
Two men (rabbits, etc.) fighting.

Total Interaction: since interaction responses of any nature in projective material may be an indicant of successful adjustment (Cox & Sargent, 1950), it was decided to include a total score of this nature.

Tension: responses suggesting anger or hostility, fear or anxiety, and frustration, whether or not they include human or animal components: e.g., explosions, scary atmospheres, menacing guns, and knives, etc. Responses referring to ugliness or dirtiness were not scored.

Examples:

Smog, blood and people.

Poison.

A monster (dragon, etc.).

R: whereas all of the above scores were expressed in terms of a percentage of *R*, this score was the absolute number of responses given by an *S*.

This limited sampling of contents constituted the predictor variables of the study. Two reliability checks were performed on the scoring system. Eight protocols were randomly selected and held from among the pretest data before the manual was constructed, and then later scored according to the principles noted above by two independent judges who had been well trained: a percentage of agreement of 90 (agreements divided by total comparisons) was noted between judges. In addition, Pearsonian correlations were calculated—using the percentage of *R* score—between one week and ten month test-retests administered to a group of fifth and a group of eighth graders. Grade five was evenly divided as to sex, but the eighth grade was weighted (70 percent) with boys. Table I gives these test-retest correlations.

A few of the short term reliabilities are respectable, but only *R* stands up well over the 10 month period. This is consistent with the findings of Kagan (1960), who noted significant

TABLE I. Content Category Test-Retest Pearsonian Reliabilities

Content Category	Grade Level			
	Fifth Graders		Eighth Graders	
	One Week <i>r</i> (<i>n</i> =21)	Ten Month <i>r</i> (<i>n</i> =18)	One Week <i>r</i> (<i>n</i> =21)	Ten Month <i>r</i> (<i>n</i> =19)
Human				
Animal	.595**	.673**	.793**	.514*
Human + Animal	.446*	.316	.376	.114
Human Detail	.434*	.434	.650**	.537*
Animal Detail	.642**	.174	.688**	.589**
Pos. Interaction	.687**	.564*	.667**	.545*
Neg. Interaction	.376	.119	.490*	.196
Total Interaction	.662**	.180	.686**	.414
Tension	.499*	.191	.578**	.281
<i>R</i>	.648**	.274	.535*	.410
	.790**	.731**	.669**	.754**

* Significant between .05 and .01 levels.
** Significant at or beyond .01 level.

(Phi Coefficient) intercorrelations on R over several years. In the present study, human content was rather encouraging, but animal perceptions were clearly lacking in stability. It is interesting to note that detail contents were among the most reliable measures. In general, it was felt that there was adequate short term reliability in the scoring system and test measures to proceed with the collection of experimental data.

Personality Measurement

The High School Personality Questionnaire (HSPQ) (Cattell, Beloff, & Coan, 1958) was used to assess personality characteristics. This is a 14 factor test most applicable to the age range of 12 to 16 years, although the authors note that it requires reading knowledge which the average 11 year old possesses; they also point out that content overlap occurs at the lower age levels with another test devised to test 11 year olds (Cattell, et al., 1958, p. 3). Since the present authors felt it desirable to use one measuring instrument for all Ss, original plans to include fifth graders in this study were dropped. Even so, over one-half of the sixth graders (20 per cent of the entire sample) were not quite 12 years of age. A check of their reading comprehension on Form I, of the Iowa Tests of Basic Skills (Lindquist & Hieronymus, 1959) indicated that 90 percent of this group read at the 11 year level and over one-half read at the 12 year level. It was therefore decided to include the sixth graders even though technically they did not meet the minimal CA requirements.

The HSPQ contains 142 items and takes about one hour to administer. Raw scores were used as data of this study, and those factors necessitating corrections for sex were so corrected. No attempt will be made to define the HSPQ variables, and a general consideration of those factors having relevance to the findings of the study will be deferred to the Results and Discussion sections. However, it should be noted that the HSPQ has slightly

higher two week retest stability coefficients for the 14 factors (in the .70's) than it has split half consistency coefficients (.40's and .50's) (Cattell et al., 1958, p. 10).

Popularity Measurement

Popularity was taken as an index of social adjustment, and was measured sociometrically. Each S selected children (either sex) with whom he would "like best to play any of the games that we know" and a second selection of children with whom he would "like best to work or make something—any of the work that we do." Although there were a few additional lines made available, only the first three lines were numbered on the sociometric instrument, and only these three were utilized in determining a child's play and work group choices. A total sociometrics score which combined the play and work group selections was also determined for each S. The popularity score of an S was the percentage of classmates who chose him in one of these first three ranks; i.e., no weight was given to position above the rank of three.

Procedure

All of the testing was done in groups, with the Rorschach administered first, as follows: Classrooms were approximately 30 x 30 feet square. Prior to the first class in the morning, a 50 x 50 inches square, beaded imscreen was set up and centered immediately in front of the blackboard. Shades were drawn and lights extinguished. A Model D TDC, 300 watt projector was used to project the slides, set back 15 feet from the screen. All Ss were given a pad of three answer sheets, with places marked for 10 responses on each sheet. They were told that the E was interested in what they might see in certain inkblots about to be projected on the screen, and asked to keep two points in mind: that this was not a test with right and wrong answers, and that the entire class would have to go through the inkblots together—one at a time.

Subjects received three trials on the ten inkblots, with an opportunity to make one response per card per trial. Responses were written on the answer sheets. Pretesting had suggested the following exposure times: on the first trial each slide was shown for one minute, with one minute provided for recording between exposures; on trials two and three each slide was exposed for 30 seconds, with 30 seconds provided for recording between exposures. Thus, the maximum number of responses which could be given was 30.

Subjects were informed that they could use the whole blot or any part of it to see something: "You might see something in *part* of the inkblot but not see something in the *whole* inkblot." The *E* also noted: "We hope that you can see at least one thing in each blot, but if you don't, that's OK. When you cannot see anything in a blot, just put an X in the space next to the inkblot number." During actual testing, the *E* repeated the following instructions immediately after flashing each card on the first trial, and then stated them randomly on trials two and three: "What might this be, what does it remind you of, what do you think it looks like?"

The other instruments were also given during the first period of the school day. Exactly one week following Rorschach testing the HSPQ was administered, and within the following week the sociometrics were obtained. All of the testing in a given

classroom was therefore completed within a two week period. Those children who were not present for the Rorschach testing were not used in the sample, but children who missed the HSPQ and sociometrics testing were picked up later in small group administrations. In all, only about three percent of the total enrollment of the classes under study were lost because of absence during Rorschach testing. The children's cooperation was excellent; they tended to view the Rorschach in particular as a kind of pleasant game.

RESULTS

An *S*'s raw score on the Rorschach content was the percentage of *R* seen in a given category, multiplied by 100 to remove the decimal point. The only absolute measure taken from the Rorschach was *R*. Based on these scores, Table II gives the Rorschach content means, sigmas and *R* of the *S*s broken down according to sex and as a combined sample. None of the mean differences between boys and girls proved to be statistically significant.

Pearsonian correlations were run between the Rorschach measures and the HSPQ for the combined sample. Of these, Table III presents those correlations which reached at least the .05 level of significance. Since there were no mean differences between the sexes, according to one line of reasoning, a total group correlation between the Rorschach and the HSPQ might have sufficed.

TABLE II. Rorschach Content Means, Sigmas, and Response Frequency

Rorschach Content	Boys (n=86)		Girls (n=80)		Total Sample (N=166)	
	Mean	Sigma	Mean	Sigma	Mean	Sigma
Human	16.67	10.58	19.03	11.38	17.80	11.00
Animal	33.63	11.30	33.24	11.24	33.44	11.24
Human + Animal	50.30	14.89	52.19	16.77	51.24	15.80
Human Detail	10.02	7.28	8.48	6.53	9.28	6.95
Animal Detail	10.72	7.10	10.03	6.90	10.39	6.99
Pos. Interaction	10.60	8.05	12.44	10.95	11.49	9.57
Neg. Interaction	2.77	3.79	3.58	4.51	3.16	4.16
Total Interaction	13.37	8.84	16.01	13.09	14.65	11.14
Tension	12.02	7.58	10.36	8.02	11.22	7.82
R	24.66	5.50	25.99	3.88	25.30	4.82

Note.—there were no significant differences between means for the sexes.

TABLE III. Pearsonian Correlations between Rorschach Measures and HSPQ Factors for Total Sample (N=166)

Rorschach Measure	General Intell.	Ego Strength	Excitability	Dominance	Sup. Ego Strength	Esthet. Sensit.	High Self Sentiment
Human		-.209**					-.209**
Animal				.164*	-.175*		
Hu + An.					-.209**		-.217**
Hu. Det.					.190*		
An. Det.						.154*	.218**
Pos. Int.	.208**		.166*				
Neg. Int.	.139	-.164*					
To. Int.	.231**						
Tension						-.215**	
R	.210**				.153*		.163*

* Significant at .05 level

** Significant at .01 level.

However, in an exploratory study of this nature it was felt that a breakdown by sex might throw needed light on the content categories. Table IV gives correlational data between Rorschach measures and the HSPQ for boy ($n=86$) and girl ($n=80$) subgroups. All of those variables having relevance to an interpretation of Table III are included in Table IV. Also, a few additional HSPQ variables have been added to Table IV, because they reflect a significant correlation in one sex even though their combined values did not reach the .05 level.

Sociometric scores fell into three groupings: play, work, and total. Rorschach content for the combined sample (both sexes) was correlated with these groupings, with the following relationships (separated by the "&" sign) reaching the .05 level of significance: human & play, .170; human & total, .158; human + animal & play, .156; human + animal & total, .171; positive interaction & play, .179; R & work, .156. Broken down by sex, the sociometric correlations of relevance were as follows: *Boys*: human & play, .231, $P<.05$; human & total, .206, not sign.; human + animal & play, .237, $P<.05$; human + animal & work, .245, $P<.05$; human + animal & total, .278, $P<.01$; positive interaction & play, .328, $P<.01$; positive interaction & total, .247, $P<.05$; total interaction & play, .320, $P<.01$; total interaction & total sociometric,

.251, $P<.05$. *Girls*: none of these correlations proved to be significant: human & play, .119; human & total, .120; human + animal & play, .082; human + animal & work, .052; human + animal & total, .077; positive interaction & play, .071; positive interaction & total, .025; total interaction & play, .036; total interaction & total sociometric, -.012.

To see if the Rorschach content could discriminate between the extremely neglected—hence presumably maladjusted—child and the extremely popular child, isolates (i.e., those Ss receiving no choices on the sociometrics) were contrasted with Ss who were chosen by at least 25 percent of their classmates. Between 15 and 20 children (both sexes) were represented in these extreme groups for play and work group choices. However, no significant differences were found between the mean Rorschach contents of these extreme groups.

Certain of the content categories can be legitimately intercorrelated. Since there was a rather uniform consistency for boys and girls, only the combined sample intercorrelations reaching the .01 level of significance will be given: human & human detail, -.286; human & animal detail, -.314; animal & human detail, -.222; animal & animal detail, -.241; animal & R, -.229; human + animal & human detail, -.355; human + animal & animal detail, -.396; total interaction & human de-

TABLE IV. Pearsonian Correlations Between Rorschach Measures and HSPQ Factors for Boys (86) and Girls (80)

Rorschach Measure by Sex		General Intell.	Ego Strength	Excitability	Dominance	Surgency
Human	Boy		-.126			
	Girl		-.238*			
Animal	Boy				.056	.066
	Girl				.275**	.237*
Hu. + An.	Boy	-.040				
	Girl	.259*				
Hu. Det.	Boy					
	Girl					
An. Det.	Boy					
	Girl					
Pos. In.	Boy	.167		.336**		
	Girl	.251*		.050		
Neg. In.	Boy	.022	-.150			
	Girl	.011	-.129			
Tot. In.	Boy	.232*		.316**		
	Girl	.241*		.046		
Tension	Boy					
	Girl					
R	Boy	.256*				
	Girl	.134				

Rorschach Measure by Sex		Sup. Ego Strength	Esthet. Sensit.	Coacsthena	Guilt Prone	High Self Sentiment
Human	Boy					-.174
	Girl					-.226*
Animal	Boy	-.083				-.069
	Girl	-.281**				-.206
Hu. + An.	Boy	-.209				-.176
	Girl	-.203				-.248*
Hu. Det.	Boy	.121		-.253*		
	Girl	.256*		.019		
An. Det.	Boy		.287**			.247*
	Girl		.169			.177
Pos. In.	Boy					-.272**
	Girl					-.021
Neg. In.	Boy		-.278**			
	Girl		.019			
Tot. In.	Boy					
	Girl					
Tension	Boy		-.196		-.064	
	Girl		-.187		.249*	
R	Boy	.204				.242*
	Girl	.116				.095

* Significant at .05 level.
 ** Significant at .01 level.

tail, -.312; total interaction & animal detail, .211.

DISCUSSION

Although mean differences between the sexes on the content categories do not exist, the pattern of correlations with the personality and sociometric measures presents quite a contrast between boys and girls. No doubt developmental differences have been masked by the method in which the

data were analyzed, but it was felt that such discriminations were best suited for subsequent researches of this nature. The essential hypothesis under consideration—that group Rorschach content can be related to independent measures of personality and popularity—was considered verified.

Turning to a more specific consideration of the relationship between content categories and personality measures, those Ss who reported inter-

action, particularly positive interaction, and who gave several responses to the inkblots, tended to be the more intelligent Ss. This finding is consistent with the usual interpretation of R and M in the classical scoring system. Reporting positive interaction is also related to an excitable personality makeup, although this seems limited to the boys. Cattell et al. (1958, p.28) describe this excitability factor as an assertive, mind wandering distractibility which does not always appear in adults. For the total sample, seeing negative interaction in the blots is suggestive of emotional instability; but so is the reporting of human content per se. This is particularly interesting since human content was predictive of social adjustment for the boys. The implied inconsistency clears up when sex differences are taken into consideration. For both sexes, human & positive interaction contents correlated at the .01 level: girls, .661; boys, .613. However, negative interaction & human contents correlated as follows: girls, .323, $P < .01$; boys, $-.003$. It would thus appear that when boys are considered as a uniform subgroup the contaminating effect of negative interaction content on human content does not operate.

Interpretations of results based on animal content must be viewed as highly suspect, due to the low reliability of this category. Animal content seems to have different implications for boys than for girls. There were no significant correlations for boys, but girls who report a great deal of animal content tend to be dominant, outgoing, happy-go-lucky individuals with little need to assume conscientious responsibility. From the author's description of the test variables having relevance (Cattell et al., 1958, note esp. p. 31), it would seem that such girls have weak ego structures, a not infrequent interpretation made of animal content—albeit for both sexes.

On the other hand, those girls who

reported a great deal of human detail, and those Ss who proffered several responses (R), tended to be the more emotionally mature, conscientious individuals. The latter finding in particular has face validity, in that one would expect the well socialized, conforming child to respond best to the E as an authority figure. Many clinicians also interpret detail responses as indicative of this personality type. In this regard it is interesting to note that those boys who report increasing amounts of human detail were the type to accept common standards, and to go along with the group (i.e., human detail content for boys was negatively correlated with Coaesthesia, a measure of individualism). Further, animal detail was positively related to high self sentiment, a characteristic noted in children who are self controlled and willing to accept approved ethical standards.

The aesthetically sensitive, artistic and imaginative child tended to report animal detail in his protocol. Those children who saw a good deal of tension or negative interaction were more likely to be self sufficient, realistic, and not prone to cultivate an artistic or imaginative inner life. For the girls, a high incidence of tension content was suggestive of timidity, anxiety, and insecurity. Also for the girls, the human + animal category was significantly related to intelligence and to a tendency for low self sentiment, excitability and the rejection of cultural standards. For the boys, giving many responses to the Rorschach cards was indicative of high self sentiment and controlled, exacting will power.

The sociometric findings ran counter to the authors' expectations. Knowing that girls mature and develop social interests at an earlier age than boys, it was erroneously presumed that they would be more readily differentiated on sociometric variables. As it turned out, none of the correlations for the girls reached sig-

nificance. It may be that girls actually make such fine discriminations in choosing their friends that the Rorschach contents were masked due to the finer groupings.

The reporting of human content was related to popularity in play group selections, as was the reporting of positive interactions. Animal content in itself did not predict to the sociometric choices, but when combined with human content did reach significance, suggesting that the latter factor was the important one. Interestingly, for the combined sample, those children who gave a greater number of responses were more likely to be chosen by their peers for work activity. This probably is a reflection of the findings mentioned above: Ss giving the largest R were more intelligent, self sufficient, etc., hence presumably good bets for successful completion of work assignments.

There are of course several questions left unanswered in an exploratory investigation of this nature. For example, the fact that isolates could not be discriminated—profile fashion—from very popular children may have been due to the lack of sociometric predictability noted among the contents of the girls. To have examined this further would have reduced the size of the extremes considerably, and thus it was decided to put off this problem for later. There is also no assurance that the content categories chosen for study are the most relevant ones. The reliability and validity correlations are quite modest, and not overly reassuring to those who would like to use the inkblot test for individual prediction. However, as an area of empirical study there need be no special apology for the modest validity correlations, since they approximate the usual relationship found in the study of personality characteristics of group leaders (Mann, 1959). In sum, the area of content study is promising, and in broad terms consistent with many of

the theoretical interpretations which the clinician makes.

SUMMARY

The present research was designed to test the hypothesis that group Rorschach content can be related to independent measures of personality and sociometric popularity. Subjects of the study were sixth, seventh, and eighth grade school children ($N=166$). Following a theoretical position stated at the outset, no attempt was made to examine the location or presumed determinants of a response. Contest scores, expressed in terms of percentage of total responses, were found to correlate significantly with 10 personality variables and three sociometric scores. The findings lend support to the hypothesis under investigation, although the reliability and validity Pearsonian correlations were not great. Mean differences between the sexes on content categories were not found, but the pattern of relationship between Rorschach content and personality-sociometric measures differed markedly for boys and girls.

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An Exploratory Investigation Into the Levels Hypothesis

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In the past few years a number of papers and articles have appeared which suggest that projective techniques may be measuring or tapping different levels of personality organization. This view differs from the more global viewpoint which simply stated that projective techniques measured unconscious processes. The proponents of the "levels hypothesis" emphasize the point that the frequently used dichotomy of conscious and unconscious, overt and covert, is anachronistic and does not fit much of the data obtained in research and in clinical work and should be replaced by a continuum of levels of depth or of accessibility (Hanfmann and Getzels, 1953; Dellis and Stone, 1958). Hanfmann and Getzels (1953) stated that, "We may picture personality as containing different layers or strata, varying in their degree of accessibility to observation from outside and to self observation, and also in acceptability to the person himself" (p. 281).

Traditionally, the lack of a consistent relationship between behavior as predicted from projective tests and overt behavior has been explained on the basis of questionable validity and reliability of the tests. The supporters of projective tests have argued that it is not so much a question of validity and reliability as it is a problem of adequate and appropriate criteria. Korner (1949), for example, states that projective techniques do not have, nor should they be expected to have, a relationship to overt behavior. She believes that the data gotten from projective techniques describe covert dynamic patterns only and that these covert dynamic patterns of personality should be correlated with similar material gained from intensive analytic studies of patients.

If projective tests describe only co-

vert dynamic patterns of personality, how do we then explain the lack of correlation among projective techniques which are supposedly measuring the same global, undifferentiated unconscious processes? The supporters of the levels hypothesis suggest that psychological tests reach different "levels of consciousness," some tests reaching conscious or preconscious behavior while others demonstrate principally unconscious behavior. For example, Hanfmann (1947) reports that the Sentence Completion Test elicits material closer to the level of manifest attitudes and behavior than does material obtained from the Rorschach and Thematic Apperception Test. Fisher and Hinds (1951), in their study of introjected hostility and suicide, found no significant differences in sheer amount of introjected hostility between their normal and schizophrenic groups and between paranoid schizophrenics and suicidal schizophrenics. They hypothesized, on the basis of their wide variety of projective techniques and the results obtained therefrom, that suicide did not result from the amount of hostility turned against the self but that hostility controls were in some way organized differently within the various personalities. By implication they also suggested projective tests reflect different "levels" of personality organization.

Dörken (1953), in a comparative study of a psychotic and a "pure normal" group utilizing Finger Paintings and the Rorschach, found significant intertest correlations on a number of variables in the normal group but not one significant correlation in the psychotic group. However, the intratest correlations were higher among the abnormal S's suggesting that the psychotic process results in less variability within a particular test because the

pathology is pervasive throughout the particular segment of personality that the test is measuring. He attributed the significant intertest correlations in the normal group to the consistency of the normal personality structure and further explained this finding by stating that, if different types of projective tests are used and if the hypothesis that each test elicits responses which stem from a different segment of the personality is correct, then the responses to any particular test can be consistent only if the aspects of the subject's personality structure are themselves consistent. In a later paper, Dörken (1956) stated quite explicitly that it is quite possible that each type of projective test may offer results which are consistent in themselves and yet quite unrelated to the results obtained from other types of projective techniques because different projective techniques may be tapping different segments of personality organization. He further stated "... the extent of this disparity may reflect the degree of internal change within the personality structure due to mental disorder... and opens a fascinating new approach to the study of the organization of personality" (p. 105).

Schafer (1954) has also pointed out that different tests seem to tap different levels of psychic functioning. However, his major emphasis has been on the different levels of personality as reflected in only one test, the Rorschach.

In factor analyzing a group of psychological tests which included several projective techniques (Rorschach, TAT, Rosenzweig P-F Study, Word Association Test), Stone (1955) found very little correlation among the tests, at least in terms of the variable of hostility which each of the tests was "supposed" to be measuring. As would be expected from the low intercorrelations, the different tests did not load significantly on the same factors. Stone suggested several alternative hypotheses to account for the low intercorrelations among the

projective tests: 1) either the tests are not all measuring hostility but different phenomena entirely or 2) they are measuring the same phenomena but at different "levels" of the personality or, 3) they are reflecting different aspects of the same phenomenon at different "levels" of the personality. He reasoned that if the different projective techniques were measuring different levels of personality functioning they were obviously not measuring the same variable and should not be expected to correlate highly.

In his study of the expression of affect in the TAT and SCT with selected Rorschach variables, Carr (1956) reported some predictions borne out in that certain expressions of affect did correlate through the three tests but many of his predictions were not borne out by his results and often were in the opposite direction from that anticipated. Carr explained his obtained inconsistencies by stating that "This perhaps is not surprising, as tests representing such varying degrees of ambiguity are also generally assumed to tap different levels of personality functioning" (p. 141). Hanfmann and Getzels (1953) reported research results which supported their clinical impression that the material evoked from the Sentence Completion Test stems from a different personality level from "deeper" tests such as the Rorschach or Figure Drawings. They felt that the preponderance of content gained from the Sentence Completion Test is either conscious or fairly easily accessible to consciousness. They concluded that the Sentence Completion Test is "somewhere" between a projective technique and a questionnaire in terms of the levels of different depths of personality that the test measures or reflects.

Leary (1957) developed an empirical, multi-level conception of personality evaluation. These levels were described as: 1) Public Communication (social impact on others), 2) Con-

scious Communication (perceptions of self and world), 3) Private Communication (preconscious symbolic expression), 4) The Unexpressed (omitted themes), 5) Values (ego ideal).

A variety of measures is used especially on the first three levels, e.g., MMPI, TAT, Interpersonal Adjective Check List, sociometric ratings, and observer's ratings. However, the fifth "level" is not in the depth sequence and the fourth level is defined but no adequate measures are provided. At this point in his theoretical formulation, Leary has three measurable *levels* of personality chiefly in the conscious and preconscious areas.

We have had a continuing sizeable population of patients at the Southeast Louisiana Hospital psychiatrically diagnosed as pseudoneurotic or pseudoschizophrenic (we mean those patients whose overt symptomatology is characterized by neurotic-like mechanisms or behavior not unlike those seen in so-called character disorders; however, a careful and intensive psychiatric examination often reveals evidence of underlying schizophrenic mechanisms.) These patients are often diagnosed and treated as psychoneuroses, but in many cases followed over a period of time overt psychosis does develop. The important point here is that these patients show good reality contact, are free of any secondary or restitutional symptoms and, without a careful and intensive work-up, are often diagnosed as psychoneuroses or personality disturbances (character disorders).

On the basis of our experience with these patients over a number of years, we have been greatly impressed with the lack of a direct relationship between the amount of pathology obtained from certain psychological tests, principally the Rorschach and Draw-a-Person, and the clinical picture presented by the patient. The Rorschach protocols almost without exception revealed dramatic schizo-

phrenic pathology including all or some of the following: bizarre content, confabulations, deterioration responses, world destruction fantasies, poor form level, no movement and no color. The Figure Drawings most often showed a great deal of chaos and disorganization, bizarre distortions and poor reality testing. When the Rorschach and Figure Drawings were inspected "blindly," a diagnosis of a blatant schizophrenic reaction was strongly suggested. However, clinically these patients did not manifest any gross intellectual or affective deviation and were often referred for psychological testing because of the difficult differential diagnostic problem.

We commenced to study these pseudoneurotic cases intensively. After reviewing many test records of such patients, it became strikingly clear that what will be designated as the "surface" tests, namely the Wechsler and the Forer Structured Sentence Completion Test (Forer, 1950) (and occasionally the TAT), did not show any gross thought disturbances whereas the "depth" tests, namely the Rorschach and Draw-a-Person Test (and also, occasionally the TAT), showed marked disturbances of thinking and an accumulation of pathognomonic signs of schizophrenia. Among the "depth" tests, the Rorschach and Draw-a-Person seemed always to show dramatic pathology whereas the Thematic Apperception Test sometimes disclosed less pathology than the other two but usually somewhat more pathology than shown on the Sentence Completion Test or Wechsler. In contrast, the overtly psychotic patient showed significant disturbances on all tests. *In over 200 test protocols of various types of schizophrenia which have been approached with this hypothesis in mind, there has not been any striking reversal of this "surface-depth" continuum. That is to say, we have not seen any test batteries in which there was a bizarre Wechsler scale and patently schizophrenic Sentence*

Completion Test where the Thematic Apperception Test, Rorschach and Draw-a-Person were free from gross pathology (Dellis and Stone, 1958).

Hypotheses

We have been led to hypothesize that in using a battery of psychological tests, namely the Wechsler-Bellevue Intelligence Test (and/or the WAIS), Forer Structured Sentence Completion Test, Thematic Apperception Test, Rorschach Test, and Draw-a-Person Test, that each of these tests in the order named reach in succession, "lower or more primitive levels of impulse-control systems."¹ Our general frame of reference is that personality is organized at different levels of impulse-control systems. We believe that these different levels of personality organization consist of a variety of impulse-control systems which exist on a continuum from those which are very primitive and undifferentiated to those which are highly organized and differentiated. Organization and differentiation of these various impulse-control systems probably arise through maturational and developmental processes (Cf., Piaget, 1930; Werner, 1940). The essential point is that we believe, along

¹In the development of the "Levels Hypothesis" we have used a variety of terms including levels of consciousness, levels of defenses, of depth, of accessibility, of personality organization and integration, etc. None of these seemed to be completely satisfactory in describing what we wanted to convey by the concept of "levels." At present, we are using the construct, "levels of impulse-control systems," as we believe this best represents our schema of what the different psychological tests are measuring. Rapaport (1954) states that "... the primitive and fundamental forms of organizing our world. . . are impulse-determined. They disregard both the objectivity and the relativity of the real world. One of the fundamental aspects of psychological development is the erection of impulse-controls. These controls arise progressively in hierarchical layering and to each of these layers there seems to correspond a manner of organizing experience. To every advance in impulse-control corresponds a step ahead toward an increased regard for the real world in the manner of organizing experience" (p. 188).

with Hanfmann and Getzels (1953) that the frequently used dichotomy of overt and covert, conscious and unconscious, etc., should be replaced in our thinking by a more finely differentiated continuum of levels of depth or of accessibility. Our specific hypothesis in regard to psychological tests is that there is an inverse relationship between the degree of stimulus structure inherent in the test and the level of personality or impulse-control system being "tapped" by the test. In other words, the more highly structured the test, the more likely that the great amount of data gained will be from a more conscious level of the personality and that the less structured the test, the less conscious the material obtained.

On the basis of these observations we decided to subject the hypothesis to experimental investigation and the following preliminary study was carried out.

METHOD

Subjects

The subjects consisted of 20 hospitalized patients ranging in age from 15 to 37 and all psychiatrically diagnosed as pseudoneurotic or pseudo-characterological schizophrenia. The protocols of the five tests on each of the 20 patients were randomly selected from a larger pool and then submitted on two different occasions to three judges to be rated for the "amount" of psychopathology as measured by the Menninger Health-Sickness Rating Scale (1952). The judges were instructed to rate each test on the Menninger Scale from 1-100 with 100 representing "perfect" health and integration and 1 representing complete disorganization and chaos. All the protocols were coded so that the judges knew only the sex and age of each patient. Approximately two months intervened between the first and second rating.

RESULTS

The first thing which had to be ascertained was whether each judge's

ratings were reliable. This was checked by comparing each judge's first rating of each of the tests with his second rating done two months subsequently. Intrarater reliability ranged from an r of .72 on the SCT to an r of .86 on the Rorschach and all were significant beyond the .01 level. This result suggests that the Menninger Health-Sickness Rating Scale can be reliably utilized to judge pathology with each of the five tests used in the present study.

The second step was to check the degree to which the three judges could agree with each others ratings of each of the five tests. Interrater reliability ranged from .69 on the Wechsler to .85 on the Rorschach and all were significant at beyond the .01 level.

Our next procedure was to run t -tests between each of the five tests under consideration to determine whether the different tests were indeed reflecting quantitative differences in pathology. The results are included in Table I.

As can be seen from Table I, the results were not entirely as predicted. For example, the only adjacent tests which were significantly different from each other were the TAT and the Rorschach. There was no difference between the Wechsler and SCT,

between the SCT and TAT, and between the Rorschach and DAP. However, the difference between the Wechsler and TAT was significant at the .05 level and between the TAT and Rorschach at the .01 level. The mean scores of each of the tests did follow the predicted direction (Wechsler the lowest amount of rated pathology, then the SCT, TAT, Rorschach and DAP the highest amount of rated pathology). Therefore, in terms of the amount of pathology (or the accessibility of pathology) as rated by the Menninger Scale, the Wechsler and SCT can be treated identically as can the SCT and TAT and the Rorschach and DAP. Instead of dealing with five tests, each measuring or reflecting different amounts of pathology (or different levels of the unconscious), our results indicate that there is a great deal of overlap between the tests.

DISCUSSION AND CONCLUSIONS

If the "Levels Hypothesis" is supported by future observations and research then several major modifications would need to be made in our current approach to and thinking about psychological tests. It would be hazardous, for example, to make a blind diagnosis based on data from one test alone. This is not to say that

TABLE I. Means, SDs, and Significance of Difference Between Each of the Five Tests

Measure	Mean	SD	t	P
Wechsler with SCT	60.95	13.39	1.05	N.S.
Wechsler with TAT	56.30	13.98		
SCT with TAT	60.95	13.39	2.12	.05
TAT with Rorschach	51.40	14.41		
Rorschach with DAP	56.30	13.98	1.06	N.S.
	51.40	14.41		
	51.40	14.41	3.20	.01
	37.75	11.81		
	37.75	11.81	1.30	N.S.
	33.45	8.19		

Note—N of 20 for each mean

the experienced clinician can not gain a great deal of information from a single test, such as the Rorschach. However, if personality and psychopathology are organized at different levels, then a more complete and more useful appraisal would result from the use of a variety of tests which tap these different levels of personality organization and integration, or impulse-control systems as we have chosen to call them.

In selecting a number of tests to be administered to a particular patient, consideration should be given as to whether the tests measure *primarily* "surface" or "depth" material. Getting at the surface as well as the underlying impulse-control systems would appear to be vital particularly in the diagnosis of the more difficult cases such as the pseudoneurotic or pseudo-characterological schizophrenic states.

The problem raised earlier in the present paper, namely the lack of consistent research findings concerning the correlation among various projective tests might also be accounted for by the Levels Hypothesis. If the psychological tests discussed in the present paper are reflecting different levels of personality organization then it is quite conceivable that they are not measuring the same variables and should not be expected to correlate highly with each other. For example, Holzberg and Belmont (1952), in comparing Rorschach and Wechsler-Bellevue variables having common psychological rationale, found only four out of 45 predicted correlations to be significant. On the other hand, the Levels Hypothesis would suggest that tests which have essentially similar stimulus structure should correlate highly. Although the research literature in this area is not extensive, several studies seem to indicate that tests utilizing similar material do correlate well with each other: Rorschach and Behn Rorschach (Buckle and Holt, 1951; Eichler, 1951); Rorschach and Finger Painting (Dörken, 1953); Rorschach and Mosaic (Zucker, 1950);

TAT, Four-Picture Test and MAPS tests (Shneidman, 1949); and TAT and MAPS (Shneidman, 1949; Shneidman, Joel and Little, 1951).

As regards the conflicting findings in correlating projective test behavior or responses with overt behavior, the Levels Hypothesis offers several tentative explanations.² The hypothesis suggests that the appearance of a particular trait in one impulse-control system may have an entirely different significance from its appearance in another impulse-control system. It is not sufficient to know that a patient produces, for example, many hostile responses; we also need to know on which test or tests these responses were given since hostility inferred from the Rorschach may be quite different from hostility inferred from a Sentence Completion Test. The appearance of many hostile responses on the Rorschach, for example, does not provide us with sufficient information to make valid predictions about the overt behavior of the individual. One must take into account not only the impulse and the defenses against the impulse as revealed in the Rorschach but also, what happens to this impulse as it strives for expression and "passes through" other impulse-control systems. It is quite conceivable that as primitive, relatively little organized hostile impulses strive for expression into overt behavior, the influence of more highly organized control systems can so modify the basic

²Primary consideration should be given to the fact that different investigators have utilized different tests, different systems of scoring and analysis, with different groups of subjects who, although having the same diagnosis, may be quite different on just those variables which are being studied and compared. It seems to us that, in order to do effective research to answer the question of why projective tests often do not correlate with each other nor with overt behavior, we must carefully define our samples (and not just lump all people with a diagnosis of, e.g., schizophrenia, into an experimental group) and make sure that the various groups are as homogeneous as possible for the purpose of studying the particular variables under consideration.

impulse that the end-product bears little resemblance to the original. Thus, the hostility which is manifested in the Rorschach may not be directly observable in overt behavior. The impulse-control system in which a trait variable appears would seem then to be of great importance in predicting what kind of overt behavior will occur.

SUMMARY

An attempt is made to describe the development of an hypothesis, based on our work with patients diagnosed as borderline schizophrenic states, which relates both to the organization of personality and psychopathology and specifically, to a new way of looking at projective techniques. The "Levels Hypothesis," as we have termed it, has as its major premise that there is an inverse relationship between the degree of stimulus and response structure inherent in a psychological test and the level of personality or "impulse-control system" which is being "tapped" by the test. In other words, the more highly structured the test, the more likely that the greater amount of data gained from it will be from a more conscious level of personality and vice versa. The above hypotheses are, in substance, supported by the results obtained in the present study.

The hypothesis is offered tentatively as possibly explaining conflicting research findings in regard to projective tests correlating with each other and with overt behavior. If supported by further observation and research the Levels Hypothesis could conceivably affect the entire concept of validity in regard to projective techniques. It is further suggested that material from "surface" tests as well as from "depth" tests be taken into consideration in everyday clinical work as well as in research.

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BOOK REVIEW

Helman, Zena. *Rorschach et Electroencephalogramme chez L'Enfant Epileptique (Rorschach and Electroencephalogram in the Epileptic Child)*. Paris: Presses Universitaires de France, 1959; pp. vii + 405. Paper bound. Price ca. \$5.

The author investigated the relations between changes in epileptic children's Rorschach records, free drawings and electroencephalograms. She examined 107 children between the ages of about 6 to 13 years. Of this group, 84 were examined once and 23 two to five times within 3 weeks to 63 months. The interval between the first and last examination was 3 weeks to 6 months in the case of 5, and at least 12 months in the case of 18 children. The 3 longest intervals were 2, 3 and over 5 years. Twenty-three parents also were examined.

Dr. Helman does not give a survey of any of her results in tabular form. While, no doubt, her conclusions were influenced by her psychological work with all the children, her discussion chiefly concerns her most valuable sub-group, the followed-up cases. The results are illustrated in individual case studies with the silent assumption that they are typical of the whole sample. The boy with the longest follow-up is discussed on 44 pages which gives the reader an excellent opportunity to acquaint himself with electroencephalographs, Rorschach records, and free drawings (of houses, trees, but not of human figures) of children whose epilepsy is associated with intellectual deterioration. All the free drawings and Rorschach records of this boy, seen between the ages of 8 and 13 years, are reproduced and analyzed. Relevant excerpts from the encephalographs are also shown. The epileptoid pattern in families is illustrated by Rorschachs, etc., of the children and their parents. The reader will find altogether 39 Rorschach records with samples of electroencephalograph recordings and free drawings in several of the cases.

The main conclusion is that, on the whole, changes in the Rorschach parallel changes in the EEG. The measurement was in terms of overall ratings of change in terms of better, worse or same, without the use of a limited number of specific signs as indices of measurement. The changes are definite

but not striking in the great majority of reproduced cases. Dr. Helman found sometime (in at least one case) no difference between 2 Rorschachs of the same patient although the patient had become worse by clinical and EEG standards. The reader has no opportunity to reach an independent opinion in this case because the test records were not reproduced. Dr. Helman noted that the second Rorschach record contained fewer texture responses (though the sum of colors had not diminished) and that perseveration had somewhat increased. It is likely therefore that the parallelism between Rorschach and EEG is close indeed, perhaps even in this alleged exception to the rule.

Many of the children produced up to 3 human movement responses despite the epilepsy and the very inferior IQs. However Dr. Helman noted that intellectual deterioration in child epileptics is manifested by a drop in the number of M and a decrease in ideas expressing linkage. Fr. Minkowska, a recently deceased well known psychologist Rorschach expert, discovered that E. Bleuler's statement about the schizoid individual's detaching himself too much and the epileptoid individual's detaching himself too little from the environment can be demonstrated on the Rorschach test. Minkowska said that the characteristic feature of epilepsy was interest in linkage, in connecting things together, in uniting human beings by some bond. She went on to say that, by contrast, the schizophrenic was preoccupied with ideas of separation, of cutting off, of severing links. The separation theme, in its manifold forms, is indeed more frequent in schizophrenic Rorschachs than in those of any other group, including the epileptics. It is also true that, in epileptic Rorschachs, the theme of binding or holding together is more frequent than that of separation. However the epileptics are by no means unique in this respect. Therefore the separation and linkage themes can be helpful diagnostically (with an accuracy of about 70 per cent) only if the differential diagnosis is reduced to a choice between schizophrenia or epilepsy.

The ten page summary of findings regarding Rorschachs of epileptic children does not contribute anything new. It is a pity that having at her disposal so large a number of cases, the largest in literature, carefully examined, Dr. Helman did not attempt to compute some frequencies to make her gen-

eralizations more meaningful, and that she did not confront her results with those of her predecessors.

The lack of a control group leads to over-generalization. The author considers it significant that her children called red the pink areas in pl. IX. This habit is not limited to epileptics and most likely reflects a language habit rather than a tendency to experience pink as if it were red. She also relates the epileptics' frequent interest in the supernatural and in religion to their tendency to give black color responses on the Rorschach test.

The children were examined in the neuro-surgical service of the Hospital of St. Anne's in Paris. The service is under the direction of a specialist of note, Henri Wallon who wrote the preface. Dr. Helman was interested in the relationship between mental structure and electrical brain activity. The description of psychological mechanisms and not of diagnostic criteria was her aim. This aim she has achieved. Nevertheless she did not make full use of her excellent data.

There is material for many more important conclusions than the ones she offers. Her study is descriptive rather than inductive and deductive. The restraint in the number of conclusions is quite apparent and will remain necessary as long as no systematic survey of the data is made.

Let us hope that the author will complete her good work by a thorough logical analysis of her data and a confrontation of them with what others, working with fewer cases and no follow-up, have concluded about Rorschachs of epileptics, about the relation of EEG to Rorschach and free drawings, and about irreversible intellectual deterioration and Rorschach. The author's excellent material has not been exploited as fully as it might have been which is indeed a pity. Nonetheless the book is valuable and instructive if only for the fine collection of records it contains.

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ANNOUNCEMENTS

SOCIETY FOR PROJECTIVE TECHNIQUES

CONVENTION PROGRAM

Chicago, September 1960

WEDNESDAY, 31 AUGUST: Executive Board Meeting

THURSDAY, 1 SEPT. 9:00 TO 10:50

Symposium: The use of projective techniques for predicting the outcome of psychotherapy.

Chairman: Walter G. Klopfer; Theodora M. Abel, Alan F. Greenwald, Timothy F. Leary, Richard S. Siegal; Pauline Vorhaus - discussant.

THURSDAY, 1 SEPT., 11:00 TO 12:50.

Symposium: Custom-made projective techniques.

Chairman: Bertram R. Forer; Fred J. Goldstein, Gerald S. Lesser, Albert I. Rabin.

In addition there will be a business meeting, followed by a social hour.

7:00 to 8:30

Jade Room, Sherman.

Dinner and presidential address: Gordon Derner, President. And special activities to be announced.

APA CONVENTION

INTERNATIONAL PROGRAMS

Several stimulating international programs have been scheduled for Saturday, September 3. At 2:00 P.M. in the Cotillion Room of the Hotel Morrison, Dr. Henry P. David will chair an APA Program Committee sponsored Roundtable on "Perspectives in International Psychology: Reports from Bonn and Moscow." Participants will include Drs. John G. Darley, Gordon F. Derner, James J. Gibson, Otto Klineberg, Neal E. Miller, and Roger W. Russell.

Immediately following the Roundtable, at 4:00 P.M., the APA will hold its Third Annual Coffee Hour for Visitors from Other Lands in the Hotel Morrison Embassy Room. As before, the International Council of Psychologists has been invited to arrange hostess services.

A special program related to the World Mental Health Year will be presented at 8:00 P.M. in the Constitution Room of the Hotel Morrison, chaired by Dr. Leonard

Carmichael. Participants will include Drs. Otto Klineberg, Morton Kramer, J. R. Rees, and Fillmore H. Sanford.

APA is currently exploring possibilities for a Jet Charter Flight to the XIV International Congress of Applied Psychology, scheduled for Copenhagen, Denmark, Aug. 13-19, 1961. Full details will be announced at the Chicago Convention. Administrative Officer is Dr. Henry P. David, 1 Jill Lane, Trenton, New Jersey. Requests for information should be accompanied by a self-addressed, stamped, return envelope.

REGIONAL REPORT

Burlington, Vt.

A 10-member staff of consulting editors has been named by the Journal of Individual Psychology, edited by Prof. Heinz L. Ansbacher of the University of Vermont.

The 10 are named in the May issue of the Journal, published semi-annually by the American Society of Adlerian Psychology, Inc.

They include Gordon W. Allport, David Riesman and Robert W. White of Harvard; Hadley Cantril, Institute of Social Research, Princeton; Arthur W. Combs, University of Florida; Raymond J. Corsini of Daniel D. Howard Associates, Chicago; Eugene L. Hartley, City College of New York; Abraham H. Maslow, Brandeis University; Wilson M. Van Dusen, Mendocino, Cal., State Hospital; and Adrian L. van Kaam of Duquesne University.

The Journal also has an editorial board, composed of Alexandra Adler and Helene Papanek, New York City; Rudolf Dreikurs, Chicago; Harold H. Mosak, University of Chicago; and Lydia Sicher, Los Angeles, Calif.

The May issue contains 12 articles, announcement of the program of the Eighth International Congress of Individual Psychology to be held in Vienna Aug. 29 to Sept. 1, and a book review section.

BOOKS FOR REVIEW

The following books are available for review by persons who are (a) sophisticated in the content area and (b) ready to assume responsibility for submitting a review within three months. If you are such a person,

please write to the executive Editor: Bertram R. Forer, Ph.D., 2170 Live Oak Dr. E., Los Angeles 28, Calif.

David, H. P. & Brengelmann, J. C. Perspectives in personality research.

Beck, S. J. The Rorschach experiment.

Finn, M. H. P. & Brown, F. Training for clinical psychology.

Gottsegen, M. G. & Gottsegen, G. B. Professional school psychology.

Klopfer, W. G. The psychological report.
Nel, B. F. & Pelser, A. J. K. The South African Picture Analysis Test.

Peatman, J. G. & Hartley, E. L. Festschrift for Gardner Murphy.

Remitz, U. Professional satisfaction among Swedish bank employees. (Graphology).

Ross, A. O. The practice of clinical child psychology.

Zulliger, H. The Behn-Rorschach Test.

A Very Happy Birthday to Dr. Klopfer

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EDITORIAL

May I attempt to express in a few words my reaction to the Anniversary Issue and to all the other surprises the Society had in store for me at the last annual meeting.

First, a few lines of credit are due to the two photographers who made the pictures used as a frontispiece. L. J. Stone handed an enlargement of the upper picture to me with a very witty speech (and with the signatures of all members of the Board of Directors on it). He had made the picture on the occasion of one of my visits to Vassar as a Consultant to their various research projects and in his role as film editor, which must also by now reach the silver anniversary stage. The lower one of the two pictures was also taken by a professional, Mr. Kaj Lohmann, who was for the last two years my teaching assistant at UCLA. Mrs. Klopfer selected this one from a whole sheaf of pictures he had taken in the course of the semesters.

The editorial by Bertram R. Forer bears simultaneous witness for the role he and his predecessor, Mortimer M. Meyer, have been playing as Executive Editors for the last twelve years ever since the editorial seat of the *Journal* had to be transferred from the East Coast to the West Coast. In the same period the *Journal*

reached a circulation from over one thousand copies to its present status of over two thousand copies, slowly spreading over the whole inhabited earth, even beyond the Iron Curtain. I also assume that the considerable professional prestige the *Journal* has gained in these years is mostly due to these two Executive Editors.

The biographical sketch by Pauline G. Vorhaus has been written with great devotion and an amazing degree of intuition. When I visited the Sixteenth International Congress for Psychology in Bonn, Germany last summer, several of my former colleagues were there who knew me forty years ago when I started my methodological research project comparing the theoretical approaches of experimental psychology and depth psychology to the problem of inhibition (published in 1924)¹. This project laid a firm foundation for my phenomenological approach which Evelyn Hooker described so brilliantly in her ideographic sketch called "The Fable". May I thank her humbly for it, and all the others for their spoken and unspoken sentiments.

BRUNO KLOPPER
Editor

¹ Arch. f. d. ges. Psych., Vol. 47

The Relative Utility of Animal and Human Figures in a Picture-story Test for Young Children¹

MILTON BUDOFF
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The Children's Apperception Test (C.A.T.) was developed in 1949 by Leopold Bellak as a projective technique to elicit fantasy from children between the ages of three to ten years through the use of animal figures in human settings. The initial stimulus to publication was an hypothesis that one might expect children to identify more readily with animals than with people, an hypothesis presumably suggested by Freud's analysis of little Hans (Freud, 1953). Ten animal pictures compose the C.A.T. The situations portrayed in these are based on problems common to children growing up, as suggested by psychoanalytic theory (Bellak, 1952).

Freud (1953), Goldfarb (1945) and Fenichel (1945) have discussed the child's tendencies to identify with animals. Freud has pointed out in the analysis of little Hans, an emotionally disturbed pre-schooler, that young children do not stress the gulf between the animal and the human world. Elsewhere he implies that either may be equally acceptable identification figures for young children (Freud, 1936).

Experimental attempts to investigate this problem have compared children's verbal responses to animal and human pictures and, with one exception, have generally found no differences in response to the two types of pictures. Some studies have used a series of pictures with human figures that are otherwise comparable to the Bellak animal series (Armstrong, 1954; Biersdorf & Marcuse, 1953; Mainord & Marcuse, 1954). Other investigators compared children's re-

sponses to animal pictures and Murray TAT pictures (Bills, 1950; Light, 1954). Bills reports the single finding in support of Bellak's hypothesis. He states that children between the ages of five and ten years gave lengthier stories to the animal pictures than to the human pictures. However, he used colored animal pictures and achromatic TAT cards. He failed to control the color variable. The most commonly used measures of response to the pictures in most studies were word count, reaction time to pictures, frequency of picture rejections, number of characters mentioned and number of introduced figures. Armstrong (1954) used the transcendence index suggested by Weisskopf (1950).

All the studies reported have used school age children in their samples ranging in age from 6-10 years. This may be one reason for the consistent failure to find support for Bellak's hypothesis. Bellak states that the appropriate age range for the animal pictures is "three and up to possibly ten years" (Bellak, 1952). Bellak suggests that as the child grows, he will increasingly make his primary identification with human figures. At what point in time this process will reflect itself in a child's verbal responses is unknown. Data available suggest that it is already evident with bright first graders (Armstrong, 1954; Biersdorf & Marcuse, 1953). By fourth grade (mean age—9 years), Light (1954) also reports significant differences in favor of the human pictures.

A study by Boyd and Mandler (1955) illustrates the point that though the primary identification seems to be with human stimulus figures, the animal figures may serve a particular function as purveyors of negative feelings. Using a third grade

¹ Thanks are due to Dr. W. E. Henry, who contributed many valuable suggestions, and to Mrs. Wendy Mesnikoff who kindly drew the required pictures.

sample of children of average intellectual ability, they told the children animal and human stimulus stories. Following this, they had their subjects write stories to animal and human pictures, using the same subjects in a balanced design. Story plots and complementary pictures were constructed such that animal or child characters were interchangeable without changing scene, situation or events. They reported that although the children stated a greater preference for animal pictures, the overwhelming effect of the human stimulus stories was to more significantly stimulate the production of imaginative material, irrespective of the stimulus content of the pictures presented. They inferred from this a greater involvement with the human stimulus materials suggesting primary identification with human situations. Based on their measures of originality of stories and quality of affect, they found, however, that the animal pictures more frequently elicited original stories and stories with more negatively-toned affect, suggesting some feelings of constraint with the human stimulus pictures and the use of animal figures as vehicles for disturbing affect. This result agrees with Blum & Hunt's hypothesis in formulating the Blacky Test that animal characters "facilitate freedom of personal expression in situations where human figures might provoke an unduly inhibiting resistance . . ." (Blum & Hunt, 1952).

It seems evident from the above that the lack of confirmation for Belak's hypothesis may be due in part to the age of the samples employed. All the studies, thus far, have used school age children, testing the hypothesis at the upper end of the age range. They failed to confirm it. In the present study pre-schoolers constituted the sample population. This constitutes a more crucial test of Belak's hypothesis that one might expect young children to identify more readily with animals than humans. If

animals are to be preferred as objects of fantasy, it was felt that pre-school children should indicate this most clearly.

METHOD

Eighteen four year old children, (\pm three months) attending a university nursery school constituted the sample population. Each child's I.Q. was in excess of 120, according to a Stanford-Binet Intelligence Scale, Form L (1937 revision), which was administered during the school year. Every child used in this study had both his original parents, at least one other sibling and was not considered a behavior problem by the nursery school staff.

Nine C.A.T. cards were used, card 5, the bears in a cave, being omitted. Nine new pictures were drawn depicting the same scenes as in the C.A.T. series but human figures were substituted for the animal figures. No. 7, the tiger-monkey picture, was redesigned. The attempt was made to retain its dynamic qualities and its aggression-arousing stimulus value. A large evil-looking man was drawn chasing a small child who is wearing one shoe, along a path leading to a house with an open gate. While the pictures were being drawn, two senior clinical psychologists judged the pictures until they felt the two series of pictures approximated each other.

The pictures were administered individually to each child in two sessions, two weeks apart. Nine pictures were shown, in the usual order, to each child during each session, with alternate subjects seeing the animal pictures first. The order of presentation was held constant for each subject. The standard instructions to "tell a story" were given. The test session was made a game by using a tape recorder to record the stories and then playing them back, pretending that this was a "radio game". The success of this maneuver can be gauged by the children's insistent demands to return to play the "game".

Each story was scored for the following categories of response:

1. *Productivity*. The total number of words spoken by the child were tallied. The standards for the word count are set forth elsewhere (Budoff, 1955).

2. *Story level*. Each story was given a qualitative rating as to whether the child named the objects in a picture (scored *N*); described the picture (scored *D*); or told a story with a plot (scored *P*).

A similar scoring procedure is employed by Terman for scoring responses to pictures at Year III-6 on the Stanford Binet, 1937 Revision, (Terman & Merrill, 1937). The series of pictures which elicited the highest proportion of stories with plots (scored *P*) would be considered more "useful" psychologically. In accordance with Bellak's hypothesis, this should be the series of animal pictures.

3. *Transcendence level*. The transcendence score is obtained by counting the number of comments about a picture which go beyond pure description. The transcendence index of a picture is the mean number of such statements. Weisskopf (1950) comments that pictures with low transcendence indices make it relatively easy for subjects to be factual and impersonal. Pictures with high transcendence indices make such imper-

sonal observation difficult and, as it were, "lure" the subjects away from the objective path prescribed by the instructions, "forcing" him to project. The instructions given the children in this research were changed from Weisskopf's recommended direction to "describe the picture" to "tell a story about the picture".

Two judges scored each story independently for the word count, story level and transcendence score. Reliabilities obtained for the word count was $r=.95$; story level, $r=.91$; and transcendence score, $r=.82$.

RESULTS

Bellak's hypothesis that the animal pictures would be superior to the human pictures was not confirmed with a pre-school sample. With one exception, the data indicated no differences in the predicted direction by the three criteria. One significant difference in favor of the animal pictures in the mean transcendence level for Card 1 (the eating scene) may be expected to have occurred by chance. (See Table I).

By contrast the statistical trends for this group of four year old children of superior intellectual ability suggest that the reverse of the Bellak hypothesis may be true, namely, that the human cards may elicit a greater degree of responsiveness. This finding though only a trend and without

TABLE I—Comparative Results for the CAT and the H-CAT

Card No.	Word Count		H-CAT		Mean Transcendence Level		H-CAT	
	CAT		H-CAT		CAT		H-CAT	
	Mean Number of Words	S.D.	Mean Number of Words	S.D.	Mean Number of Phrases Per Picture	S.D.	Mean Number of Phrases Per Picture	S.D.
1.	31	25	25	19	2.4*	2.8	1.5*	1.6
2.	37	—	36	—	2.7	3.1	3.6	2.5
3.	31	—	29	—	2.3	—	2.6	—
4.	35	—	36	—	1.8**	2.6	3.2**	2.9
5.	36	—	37	—	1.8	2.1	2.4	3.1
6.	40	31	46	44	1.1	—	4.4	—
7.	30	20	38	24	2.2**	2.4	3.6**	3.3
8.	34	—	38	—	2.3	2.6	3.4	4.9
9.	31	—	28	—	2.6	3.2	3.1	2.4

* $p = .10$

** $p = .20$

Note: When differences between the means are small, no standard deviation is given.

strong statistical support from the data agrees with experimental findings using school age children. The magnitude of the differences were not sufficiently large, however, to be more than suggestive.

1. *Word count:* The word count of the stories showed no consistent differences in any direction for the two series of pictures.

2. *Story level:* The human pictures did elicit a generally higher level of story. On seven of nine pictures, the ratio of stories with plots (P), to the combined total of stories given without plots, (i.e., stories rated for object naming (N), or describing the pictures (D) plus the pictures rejected), was in favor of the human pictures. This difference was near-significant, when a sign test was applied to the results ($p=.05-.10$).

3. *Transcendence level:* The mean transcendence level is low for all the pictures for this sample, as can be seen from Table 1. This may be a function of the age of these children. The data suggests that even with this group of children of superior intelligence from highly stimulating home environments, there is still a low number of stories sufficiently elaborated to be psychologically meaningful. It is doubtful whether a group much younger than these children would have done much more than name the objects they recognized in the pictures.

When each child's performance was compared for the two series of pictures, a sign test suggested consistent differences in performance in favor of the human pictures ($p=.05-.10$). "t" tests of the differences between the mean transcendence level of the shopping scene (card 4) and the tea gathering (card 8) follow the same trend ($p=.20$).

DISCUSSION

The results of this study generally confirm the findings of other investigators: Animal pictures do not seem superior to human pictures in elicit-

ing fantasy from a group of normal four year old children. However, these findings do not solve the problem of whether very young children do easily identify with animals.

It is possible that the period of primary preference for animals as vehicles for the expression of feelings passes before the average child, in his intellectual and emotional growth, is able to compose a psychologically useful story to a picture. Even the four year old children in this study who were of superior intelligence and came from intellectually stimulating homes were still too young to tell very rich or complex stories. By the time the child is able to tell a psychologically useful story to a picture, it may be that human subject matter may have already become the preferred stimulus to elicit the child's feelings and identifications.

The failure to confirm Bellak's hypothesis with this four year old sample and the trend suggesting that human stimulus figures are more useful, may indicate a developmental trend.

Armstrong (1954) with a population drawn from a similar type of educational institution as the present sample, with the implications as to similarity of home background, socioeconomic level, etc., reported significant differences in favor of the pictures with human figures when she compared the mean transcendence value of two series of pictures with primary grade subjects. It may be that increased age of her subjects had a dual effect: it increased the length of the stories and the elaborated content, allowing for the possibility of differences to appear. The stories may have also reflected a more definite trend toward an easier use of the human pictorial materials. The four year old sample anticipates these results. It would be interesting to compare the Armstrong results separately for the first, second and third graders in her sample. Is there a progressively "better" utilization of the human figures

with increasing age among her subjects?

The results of this study makes use of the CAT an equivocal procedure, as at no age between 4-10 years has the CAT proven superior to human stimulus materials in eliciting stories.

They might well be profitably employed, however, when the child may be experiencing difficulty telling stories to human stimulus figures and the clinician's hypothesis is that the humans portrayed may be perceived as overly threatening. In this situation, the animals may be helpful by serving to increase the psychological distance, thus helping the child to respond.

However, it should be clear that the CAT pictures are not animal pictures but are portrayals of animals in human-like settings. The psychological distance for the respondent may not be very great. The referents in the pictures are too easily seen as human. Thus for maximal utility it might be well to design a truly animal set of pictures for use in the clinical situations where maximal psychological distance is needed for the patient to respond optimally. Also, a set such as this might more appropriately test the hypothesis that young children identify more readily with animals than with humans.

SUMMARY

This study investigated the relative psychological usefulness of pictures portraying animals in a human-like setting and human figures in the same settings in eliciting fantasy stories from young children. The hypothesis tested was stated by Bellak (1952), who originally formulated the Children's Apperception Test, that children would identify more readily with animals than humans. In the study reported here, the pictures of the CAT were re-drawn replacing the animal figures with humans. These two sets of pictures were shown to eighteen four year old children of superior intelligence, at-

tending a university nursery school.

The measure employed in analyzing the data included a word count, a qualitative judgment of story level, and the mean transcendence level of each picture. The results indicated that the children utilized the two groups of pictures equally well, and failed to confirm Bellak's hypothesis for a pre-school group of normal children. This finding generally agrees with the results of other studies reported in the literature for school children. Some trends, evident in the data in favor of the human series of pictures, are discussed, although these differences are suggestive only.

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The Use of Bender Gestalt Cut-Off Scores in Identifying Juvenile Delinquents

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INTRODUCTION

Some studies indicate that the Bender Gestalt (B-G) (Bender, 1938) Test can be used to differentiate various behavioral groups by the use of cut-off scores. This was first done by Pascal and Suttell (1951) who believe that statistical statements can be made regarding the probability of certain scores being attained by a patient or non-patient. This has led other authors to attempt to determine more effective cut-off scores. A study by Zolik (1958) indicated that by utilizing a cut-off score of 60, which represents one standard deviation above the mean, delinquents could be differentiated from non - delinquents. This study attempts to validate independently the various cut-off scores suggested by Zolik, and Pascal and Suttell, and to evaluate whether these suggested cut-off scores do actually differentiate an independent sample of delinquents.

METHOD

All the adolescents referred to a children's psychiatric service for observation by the juvenile courts during a two year period were examined. Any adolescent with a diagnosis or known history of psychosis, organic brain damage, or mental deficiency was excluded to eliminate gross psychopathology as a variable in the B-G protocols. In addition, any subject failing to meet the statistical criteria specified by Pascal and Suttell for their scoring system was eliminated. The final sample consisted of 120 adolescent delinquents, 63 males and 57 females. The protocols of these subjects were coded and subsequently scored by one of the authors who had no knowledge of any of the individual

cases. A delinquent was operationally defined as an adolescent having had one or more contacts with a juvenile court, as well as a court placement in a children's psychiatric service for observation. The ages of the delinquent sample ranged from fifteen to nineteen years.

RESULTS

The results in general question the efficiency of cut-off scores as a method of distinguishing juvenile delinquents. Simple inspection of Table I reveals marked variability which makes the use of cut-off scores a highly questionable procedure.

TABLE I. Mean Bender-Gestalt "Z" Scores and Standard Deviations.

	Males	Females	Total
Mean	62.70	55.75	59.40
S.D.	15.91	13.67	15.29
N	63	57	120

Thirty-six cases or 30% of the juvenile delinquents in the present study obtained "Z" scores of 49 or lower, while 32 cases or 26.7% obtained "Z" scores in the 50-60 range, i.e., Zolik's questionable range. Fifty-two cases or 43.3% yielded scores of 61 or higher which are above Zolik's suggested cut-off score of 60. A Chi Square test indicated a significant divergence (.01 level) of the observed results from those expected on the basis of Zolik's sample. There are significantly more cases below a "Z" score of 50 while, conversely, at the other end of the continuum there are significantly less cases above a "Z" score of 60 than would be expected from Zolik's data. The present sample of delinquents yielded a distribution much closer to

a normal distribution of "Z" scores than did Zolik's sample.

Pascal and Suttell's suggested cut-off score of 72 segregated 36 cases or 30% of the delinquents. Forty percent or 48 cases fell in Pascal and Suttell's questionable range, i.e., 50-72, while the remaining 36 cases or 30% had "Z" scores of 49 or less. This distribution of scores tends to fall between Pascal and Suttell's standardizing samples of normals and psychoneurotics.

A *t* test of the means of the male delinquents and the female delinquents yielded a difference that is significant at the .02 level. This difference is probably due to differences in choice of delinquent behavior rather than a true sex difference as a previous study by Corotto and Curnutt demonstrated.

DISCUSSION

The results indicate poor prediction in terms of differentiating delinquent behavior from non-delinquent behavior whether one utilizes the higher cut-off score suggested by Pascal and Suttell or the lower cut-off score suggested by Zolik. The wide variability of scores in the present sample may reflect the wide range of behavior that is encompassed in the term "delinquent." It may be possible to utilize cut-off scores with some delinquent samples provided the behavioral cri-

teria have been systematically restricted to well-defined and consistent behavioral traits.

SUMMARY

To determine the effectiveness of B-G cut-off scores as a screening device for juvenile delinquents, a sample of 120 B-G protocols of adolescent delinquents were coded and scored without knowledge of the individual case. The distribution was analyzed in terms of cut-off scores reported in the literature. The results indicate that extreme caution must be used in applying cut-off scores mechanically in any but the grossest type of differentiation.

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Prediction of Successful Suicide from the Rorschach Test, Using a Sign Approach¹

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The prediction of suicidal potential from responses to the Rorschach Test is a problem often faced by the practicing clinician. A number of attempts have been made to assist the Rorschach worker in differentiating the suicidal individual from others. These attempts range from individual case analyses (Beck, 1945; Rabin, 1946; Ulett et al, 1950), configurational approaches (Hertz, 1918, 1949), responses to single cards (Lindner, 1950), combinations of the above (Sakheim, 1955), to a "sign" approach (Martin, 1952). In one sense, all can be looked upon as sign approaches, for the presence or absence of certain indicators or clusters leads to inferences regarding self-destructive tendencies in the individual. This research draws heavily upon Martin's (1952) work — in fact, can be looked upon as an extension of his investigation. For this reason, his study will be described in some detail.

Martin compared Rorschach protocols of psychiatric patients, divided into suicide and non-suicide groups, on the basis of attempted suicide vs. no overt indications of self-destructive tendencies. From this comparison he derived a checklist of 16 signs which differentiated the groups. He then set out to validate the checklist against two new sets of Rorschach protocols, attempted suicide vs. non-suicide. The checklist did differentiate, as did a seventeenth sign. (His statistical analyses with the validating sample are presented in Results, as is a table con-

taining the checklist signs.)

The present authors have had many occasions to wish for a technique which could help us make recommendations about the suicidal potential of psychiatric patients. To us, Martin's empirical findings were intriguing, although we felt "suicidal attempt" could cover a multitude of motives. A more definitive test of the checklist would be with Rorschach records of successful suicides. Even in these, one could not be entirely certain of motives. Some people undoubtedly commit suicide by "accident", i.e., as the result of a suicidal gesture that miscarried. Nonetheless, the present study had a twofold purpose: to test the checklist against the Rorschach records of a group of known suicides; and, hopefully, to provide generalizations regarding personality characteristics inferred from Rorschach test protocols which might differentiate these individuals from others. It was our overall hypothesis that Martin's signs will differentiate not only successful suicides from non-suicidal controls, but also successful suicides from those who attempt suicide. Specifically, we predicted that: 1) Successful suicides will have significantly higher scores on the checklist than controls; and 2), although both suicide groups will tend in the same direction in relation to the control group, successful suicides will score significantly higher than suicide attempts.

METHOD

Subjects. All were adult males, hospitalized with functional psychiatric disorders. All had given a minimum

¹Portions of this study were reported at the meetings of the American Psychological Association in Cincinnati, 1959.

of ten responses to the Rorschach test. Response totals showed a marked skew in each group, but medians were reasonably close (See Table I). There were three groups:

1. *Control*. This was Martin's second control group (C), used in the replicative phase of his study. It was composed of patients ($N=36$) whose case histories revealed no suicidal ideation, threat, or attempt. One patient was diagnosed as psychomotor epilepsy, the rest as functional disorders.

2. *Suicidal Attempt*. This was Martin's second suicide group (SA), also from the replicative phase of his study and was made up of patients ($N=36$) who had attempted suicide. Eleven had been tested prior to the attempt, 25 following. Two of the attempts had resulted in death. As in the control group, one patient carried a diagnosis of psychomotor epilepsy, the remainder being classified as functional disorders.

3. *Successful Suicides*. This group (SS) was composed entirely of patients ($N=36$) who had met death as a direct result of their own efforts. Data were gathered from a variety of sources², but diagnostic information was not included with some records. All subjects for whom diagnostic information was available were classified as functional disorders. Cases which did not meet Martin's criteria were excluded.³

Procedure. Martin had followed Beck's (1944) scoring procedure, so SS records were all re-scored according to Beck. To check on independent reliability, we used records of other hospitalized veterans and found we agreed almost in direct proportion to

TABLE I. Rorschach Response Totals for Control, Suicide Attempt, and Successful Suicide Subjects

	Control	Suicide Attempt	Successful Suicide
Range	10-61	10-76	11-68
Median	20.33	18.94	18.25

the adequacy of the inquiry. When an adequate inquiry was done, agreement was invariably high. Each record was examined three ways: 1) frequency distributions of signs obtained by subjects were compared among the three groups; 2) total number of signs obtained for each group in every category of the checklist; and 3) number and percentage of subjects in each group obtaining a specified sign total.

RESULTS

The first comparison, frequency distributions of signs in each group, was done using analysis of variance. This test, as shown in Table IIa, indicates the difference between groups was highly significant. To examine the difference implied in the F-ratio, appropriate t-tests were done (as shown in Table IIb), and the source of the difference was found to be between each of the Suicide groups and the Control group. There were no differences between the two Suicide samples. Thus, our first prediction, that there would be significant differences between the Successful Suicide and Control group, was supported at beyond the .001 level. The second prediction, of difference between the Suicide Attempt and Successful Suicide groups, was not supported.

The second comparison, number of subjects in each group obtaining specified signs on the checklist, entailed use of the chi-square technique with Yates' correction for continuity. Predictions regarding direction had been made, so a one-tailed test could be used to evaluate results. A look at Table III gives these results. Six of the signs, using the one-tailed test, show differences between SS and C groups significant at beyond the .05

²The authors express thanks to the V.A. Hospitals at Bedford, Brockton, Battle Creek, Downey, Danville, Boston, Northport, Lyons, Montrose, Pittsburgh, and Canandaigua and to the Augusta State Hospital in Maine for lending Rorschach protocols of patients who committed suicide.

³There were originally fifty-five records. For various reasons (e.g., known brain injury, female, less than ten responses, unreadable protocols, response to only 3 cards of the Rorschach), the number was reduced to 36.

TABLE IIa. Analysis of Variance for Control, Suicide Attempt, and Successful Suicide Groups, using Martin's Checklist

Source of Variance	SS	df	MS.	F
Between Groups	177	2	88.5	27.66*
Within Groups	342	105	3.2	
Total	519	107		

* $p = .001$

TABLE IIb. Comparison Between Groups With t-Ratio

Group	Mean	df	t	p
Control (C)	4.42			
vs SA		70	6.55	.001
vs SS		70	6.40	.001
Suicide Attempt (SA)	7.17			
vs SS		70	—	N.S.
Successful Suicide (SS)	7.11			

TABLE III. Comparison of Control (N=36), Suicide Attempt (N=36), and Successful Suicide (N=36) Subjects on Individual Signs of Martin's Checklist

Sign	No. obtaining sign			No. obtaining sign			No. obtaining sign		
	SA	C	X ² *	SS	C	X ² *	SA	SS	X ² *
1. No. of D <6 or >20	13	11	—	13	11	—	13	13	—
2. D % <60 or >79	23	14	3.558	19	14	—	23	19	—
3. No. of CF >0 to <3	21	11	4.556	20	11	3.625	21	20	—
4. Total Color R's >1	26	21	—	24	21	—	26	24	—
5. Sum C >1.0 to <3.5	17	6	6.389	16	6	3.645	17	16	—
6. C and/or CF appear 1st on VIII-X:	22	2	22.562	18	2	15.577	22	18	—
7. C and/or CF with either zero FY (T) or Y (T)F or Y (T): yes	6	0	4.545	3	0	—	6	3	—
8. No. of FV + VF <1	26	21	—	20	21	—	26	20	1.505
9. No. of FY + YF + Y <1	9	4	1.502	6	4	—	9	6	—
10. Sum Y + sum T R's <1.0	9	1	5.690	10	1	6.867	9	10	—
11. Difference between M and Sum C: <1.5	19	15	—	14	15	—	19	14	—
12. No. of H + Hd >6	4	5	—	7	5	—	4	7	—
13. No. of categories <6 or >13	8	7	—	13	7	1.791	8	13	1.076
14. VIII-X/R >29%	26	22	—	27	22	1.022	26	27	—
15. No. of P <3 or >6	17	13	—	17	13	—	17	17	—
16. P-failure with F + % >60: yes	12	6	1.852	1	6	2.532	12	1	9.387
17. T/1 R <27"	25	15	4.556	26**	15	7.352	25	26**	—

* Using a two-tailed test, to be significant (1 df), chi-square must: for .001 = 10.83, for .01 = 6.64, and for .05 = 3.84. Only chi-square > 1.0 are reported.

** There was no Time of First Response for two SS records. For Sign 17, N for SS was 34.

level. There was only one statistically significant difference between SS and SA. The more conservative two-tailed test figures, given in the table, show only three of the SS vs. C differences to be statistically significant and only one of the SS vs. SA differences.

For the third comparison, the number and percentage of subjects in each group obtaining specified numbers of signs was tabulated. Results are presented in Table IV. It is seen there was considerable overlapping among groups, and no cutoff point which takes in a large percentage of either SA or SS patients eliminates "false positives" from the C group. However, a cutoff between "7 or more" and the remainder categorized correctly 92% of C, 61% of SA, and 62% of SS. Comparing C with each of the other groups independently, this means about 77 percent of the cases could have been differentiated successfully. If the cutoff point were moved down to "6 or more", the overall predictive efficiency would decrease somewhat, due to the number of C subjects incorrectly categorized, but there would be a sizeable increase in the percentage of SS subjects correctly differentiated (from 62% to 82%) and in the number of SA subjects detected (from 61% to 72%).

To recapitulate, successful suicides could be differentiated fairly well

from non-suicides with Martin's checklist, as could suicide attempts. The checklist did not prove adequate for distinguishing attempted suicides from those who actually committed suicide.

DISCUSSION

A major purpose of the present study was to test Martin's checklist against Rorschach records of a group of known suicides, in essence a partial replication of his experiment. Differentiation between C and SS groups on number of signs was statistically significant, as was that between C and SA. The comparison of SA and SS groups, probably of greater potential clinical value, was not statistically significant.

There are a number of limiting factors to be considered, however. One major variable is the groups themselves in relation to the criterion. As indicated earlier, there is no way of knowing how many SS were in actuality "accidents"; nor how many SA, in addition to the two Martin knew about and used, later committed suicide, not to mention the possibility of suicide in his control population. Another factor is temporal. In some successful suicides, the Rorschach was given shortly before the person's death; whereas, in other cases, months transpired between the Rorschach administration and suicide. The few

TABLE IV. Number and Percentage of Control, Suicide Attempt, and Successful Suicide Subjects Scoring a Specified Number of Signs or More on Martin's Checklist.

Signs	C		SA		SS	
	No.	%	No.	%	No.	%
13 or more			0	0		
12 or more			1	3		
11 or more			2	6	0	0
10 or more			4	11	1	3
9 or more	0	0	11	31	3	8
8 or more	1	3	18	50	6	17
7 or more	3	8	22	61	17	47
6 or more	6	17	26	72	23	64
5 or more	14	39	32	89	30	83
4 or more	28	78	34	94	34	94
3 or more	35	97	36	100	34	94
2 or more	36	100			36	100
1 or more						
0 or more						

cases we do have of Rorschach shortly before suicide all have at least nine of Martin's signs. It seems reasonable to assume there would be differences in Rorschach protocols of individuals, depending upon how close to the suicide act they were obtained. We have not controlled for this in our sample. A third factor is the experimental assumption of equal probabilities regarding the criterion variable. Rather than being approximately .5, as is implied by equal N's among groups, the base rate for suicide in psychiatric populations has been estimated to be about 3 per thousand (Rosen, 1954). Our data indicate there are few differences, at least as far as Martin's signs are involved, between attempted and successful suicides. This undoubtedly would change the base rate in relation to this problem, but the p value would still be far less than .5.

We attempted to employ Martin's signs in a base rate study, using case history materials of former patients who had taken the Rorschach Test.⁴ Data were tabulated for thirty-one patients, of whom three had made definitely established suicidal attempts, four had verbalized suicidal thoughts, and the remainder no case folder evidence of suicidal ideation. The results could be taken as supporting the view that this sign approach has practical utility (mean Martin's signs for each group: 6.7, 5.3, and 5.4), but we discontinued when we noted that hospital procedures did not accord with base rate assumptions.

Rosen (1954) and Meehl and Rosen (1955), discussing relationships between psychometric data and suicide, do so in the abstract. Their view is that when base rates are considered, even a twenty-five percent "false positive" rate in the prediction of suicide would result in large numbers of patients being incorrectly categorized, hence would be of limited practical value. However, in clinical settings

psychometric findings and case disposition are hardly independent, and prediction of suicide leads to the hospital directing its energies to negate the prediction. As a matter of fact, the relationship between prediction of suicide and the response of the environment would seem to be more lawful than the subject of this study. The very fact that lawful and predictable responses are made by the hospital in response to the possibility of suicide is bound to influence "false positive" rates in particular and to complicate the question of base rates with suicide generally.

A secondary purpose of the study was the possibility of providing information about personality characteristics of suicides. Realizing the generalizations are only relative to the populations studied (i.e., hospitalized veterans) and assuming the validity of inferences drawn from the Rorschach variables themselves, a number of statements can be made. One most striking finding is the lack of differences among those who attempt and those who actually commit suicide. From a Rorschach sign approach, both groups respond to similar factors in the blots and can be discussed as suicide-prone.

And, judging from their reactions to the colored aspects of the blots, suicide-prone individuals are more highly reactive to affective stimulation. The fact that this reactivity manifests itself in such relatively specific ways, as seen in Signs 3, 5, and 6, rather than as an overall finding, as shown in Sign 4, makes one wonder whether some of the negative or indeterminate results in studies investigating reactions to color may not have masked some real differences by the very methods of approach (*cf.* review by Baughman, 1958). This reactivity to affective stimulation in the suicide-prone individual tends to be associated with impulsivity, as average time required for first response to the individual plates was significantly faster for suicide-prone individuals as com-

⁴We are indebted to Mr Raymond Farmer, Duke University, for his efforts in gathering these file data.

pared with controls. Regarding anxiety indices, both Beck (1945) and Rabin (1946) have noted these were minimal in protocols of suicidal individuals. The present findings support their observations, as a significantly larger number of control than either of the suicide-prone groups reacted to shading determinants of the blots. (Sign 10). It should be noted here, however, that this sign has given us most trouble in independent reliability checks on the signs themselves. Percentage of agreement between raters on the other sixteen signs is generally close to perfect. With this sign, percentage of agreement drops to about 90%.⁵ The reason for this discrepancy is not yet clear, but it does indicate caution should be used in ascribing meaning to presence or absence of shading determinants.

The one sign (16) which differentiated the two suicide groups from each other is difficult to analyze, although it may mean the Successful Suicides were more veridically oriented than the attempts, hence better able to direct their efforts. As one significance might have arisen by chance in 17 tests, we prefer to assume a probability function.

There are several major directions which this psychometric approach to suicidal predictors on the Rorschach test can take. The authors are currently engaged in developing a mathematical weighting system for the signs, as well as in examining the Rorschach protocols from a configurational view. Also, the results of this study as they relate to inferences about personality of suicidal patients also bear an interesting concomitance with characteristics inferred about patients with affective disorders. A comparative study among diagnostic groups is being planned. Related to this is a third avenue of investigation, of the theoretical meaning of these signs. We have found patients with pronounced sociopathic tendencies to

score high, although they are clearly not suicidal. Neither in Martin's samples or in ours was this disorder represented. It may be that we have an empirical measure of hostility, and the makeup of our groups led us to confuse its direction with the construct itself. It is certainly worth investigation.

SUMMARY

Rorschach protocols of successful suicides were compared with those of attempted suicides and controls, using a sign approach developed by Martin. Of seventeen signs, six differentiated successful suicides from controls at a statistically significant level, whereas one differentiated attempted from successful suicides. Also, sign totals obtained by each suicide group were statistically significantly higher than controls. Cutoff at "6 or more" signs classified correctly 82% of controls, 72% of the suicide attempts, and 82% of the successful suicide groups. Findings were discussed relative to base rates and personality characteristics of suicide-prone individuals inferred from the Rorschach variables themselves.

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⁵Drs. Russell Tomlinson and Edward Jordan, Durham VAH, served as raters.

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Use of the TAT and Human Figure Drawings in Research on Personality, Pregnancy, and Perception¹

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Currently, large scale programs of research on pregnancy are being conducted at several collaborating institutions located in diverse parts of the country. The focus of this programmatic research was originally intended to be on the problem of cerebral palsy in children. However, this focus has been broadened to include intensive study of a multitude of perinatal factors in child development. The main concern in these researches is with physical factors that affect the course of pregnancy and physical complications in the offspring. At several of the collaborating institutions, however, ancillary studies have been initiated in the attempt to take full advantage of the host of specialized sub-studies that are made possible through the overall, very costly, program of investigation.

The purpose of this paper is to report some interesting findings that have been uncovered in the course of an ancillary project on psychological study of emotional factors in pregnancy. More specifically, we are taking this opportunity to report some preliminary findings that indicate the research utility and validity of certain projective techniques that have been employed to date.

¹ This study was made possible by a research grant, No. B-2356, from the National Institute of Neurological Diseases and Blindness, awarded to the Brown University Institute for Research in the Health Sciences. This paper stems from a psychological investigation of emotional factors in pregnancy, which is an ancillary study to the National Collaborative Project on perinatal factors in child development. We wish to express our appreciation to Dr. Glidden Brooks, who is director of the project at Brown University, and to the clinic staff of the Providence Lying-In Hospital, who greatly facilitated this research.

METHOD

A comprehensive battery of psychological tests was administered to 53 pregnant women who were seen at the Clinic of the Providence Lying-In Hospital. In a 2-hour, individually administered, testing session, each woman was assessed with the following procedures: (a) Wechsler-Bellevue Intelligence Scale (Wechsler, 1944); (b) Manifest Anxiety Scale (Taylor, 1953); (c) series of self-rating scales; (d) cards 1, 2, 3GF, 4, and 7GF from Murray's (1913) Thematic Apperception Test (TAT); and Machover's (1949) Draw-A-Person test (DAP).

Preliminary results obtained from several of the above instruments have been presented elsewhere (Davids, DeVault, & Talmadge, in press.). Therefore, in the present report we will deal only with the figure drawings, which have not been utilized previously in our investigation, and with one objective measure derived from the TAT. Specifically, we will report findings in regard to the sex of the person depicted in the figure drawings, and the perception of a pregnant woman in stimulus card 2 from the TAT.

For purposes of this study, the total sample of 53 women was divided into two subgroups; one consisting of 25 women who had a "normal" delivery room record, and the other consisting of 28 women whose delivery room record evidenced some form of "abnormality or complication." These classifications were based on official hospital records, and the clinical judgments regarding normality or abnormality of the delivery room experience were made by qualified medical personnel.

The purpose of the analyses to be reported here was to discover relations between findings from projective testing during pregnancy and actual delivery room experiences at a time several weeks following the psychological assessment. Moreover, the objective measures derived from the DAP were related to those derived from the TAT in the attempt to assess consistency of indices revealed in these two quite different projective test situations.

On the basis of clinical experience and certain assumptions in projective theory, the following hypotheses were formulated for empirical examination.

Hypothesis I. A significantly greater proportion of the women in the normal delivery group perceive pregnant women in the TAT.

Hypothesis II. A significantly greater proportion of the women in the normal delivery group draw a female figure on the DAP.

Hypothesis III. A significantly greater proportion of the women who perceive pregnant women in the TAT draw a female figure on the DAP.

RESULTS AND DISCUSSION

As predicted, there were striking differences in the TAT perceptions of the women in the two groups. In the normal group, 60 per cent of the women told TAT stories involving perception of a pregnant woman in the farm scene depicted on card 2. The proportion evidencing this perception in the abnormal delivery group was only 21 per cent. This difference of 39 per cent is statistically significant beyond the .001 level. Chi square analysis, relating the normal vs. abnormal dichotomy to the pregnant vs. non-pregnant TAT scoring categories, yields a coefficient of 10.11, which is also significant beyond the .001 level. These findings demonstrate a high degree of association between the groupings based on real life experiences and the perceptions revealed in fantasies. Turning to the DAP, it was found that 84 per cent of the women in the normal delivery group drew a female

figure; whereas only 57 per cent of the abnormal delivery group drew a female in response to the DAP. In other words, under conditions of administration which merely requested that the subject draw a person, there was a 27 per cent difference in proportion of women in the two groups that elected to draw a figure of their own sex. The difference between these proportions is statistically significant beyond the .03 level. Moreover, chi square analysis revealed significant association ($X^2=3.42$, $P=.05$) between the two patient groups and the dichotomy of male vs. female figure drawings. These significant findings indicate an association between drawing a female figure in the projective test situation during pregnancy and later experiencing normal childbirth, with a noticeably greater tendency for women who elect to draw a male figure during the psychological assessment to later experience some form of difficulty or complication in childbirth.

Comparison of the results from the two diverse projective tests shows that 86 per cent of the women who perceived a pregnant woman on the TAT drew a female figure on the DAP. Only 59 per cent of the women who did not tell a TAT story containing a pregnant woman drew a female on the DAP. This 27 per cent difference between proportions is significant beyond the .02 level, and confirms hypothesis III. Looking at these data from another viewpoint, 81 per cent of the women who drew a male on the DAP did *not* perceive a pregnant woman on the TAT, and only 19 per cent of the women who drew male figures told TAT stories containing a pregnant woman. Chi square analysis, relating the male vs. female DAP categories to the pregnant vs. non-pregnant TAT categories, yields a coefficient of 3.95 which is significant beyond the .05 level. Thus, the overall findings indicate that each of the indices from the projective tests is significantly related to the groupings based on delivery room records, and

the two projective measures are significantly associated.

All in all, then, this rather simple approach to utilization of projective material has produced significant findings. In view of the negative results that have been reported in many attempts to use projective tests for research purposes, these findings are quite encouraging. Particularly in regard to the DAP, as vividly indicated in Swensen's recent (1957) review of the literature, attempts at empirical evaluations of human figure drawings have usually met with failure. Of special relevance to the present study is Machover's (1949) hypothesis that the individual who is identified with his own sex will draw the self-sex figure on the DAP. Machover reported that some degree of sexual inversion was contained in the records of all individuals who drew the opposite sex first in response to the DAP. On the basis of his review, however, Swensen (1957, p. 460) concluded that, "... no considerable empirical support for Machover's hypotheses exists at the present time. Perhaps the most charitable thing that can be said ... is that few of Machover's hypotheses have been explicitly tested by definitive studies. But those which have, such as her hypothesis concerning the sex of the first drawn figure, have not been supported by empirical evidence." It appears, then, that our preliminary attempt to empirically assess the research utility of this projective instrument will provide some positive findings to be considered in future evaluations of this procedure. Admittedly, we have made only a small beginning, but the degree of success met with this preliminary effort should serve to encourage much more complex, and time consuming analyses of projective material contained in human figure drawings.

The present finding in regard to selective perception in response to TAT stimuli is directly pertinent to the topical area that has been commonly referred to as "personality and

perception" (e.g., Bruner & Krech, 1949; Blake & Ramsey, 1951; Witkin, et al., 1954). Reviews of the vast research literature in this area bear witness to the fact that psychologists have been greatly concerned with the influences of motivational factors on selection in perceptual organization. Some of the motivational variables shown to affect perception are: physiological needs, established values, social attitudes, and personality attributes. Although many of these laboratory experiments on "personality and perception" are relevant to the theory and practice of projective testing, the possibility of a linkage between these two domains has received relatively little attention (e. g., Davids, 1955; Eriksen & Lazarus, 1952; Lindzey, 1952). One of the apparent shortcomings in attempts to relate research and practice, however, is that most of the research findings have come from attempts to artificially stimulate various psychological needs or physiological states in the perceivers being studied. In these rather contrived laboratory situations, it is difficult to know just how hungry, thirsty, sexy, or aggressive the perceiver is as a result of the experimental manipulations. Such ambiguity in understanding of the perceiver's physiological or psychological state may account for the ambiguous findings that are often obtained in studies of response to ambiguous stimuli. In the present investigation, however, working with a real life condition (i.e., pregnancy) with definite physiological correlates, we found rather striking relations between motivation and perception. In comparison with numerous women who have been assessed clinically with the TAT, the pregnant women in this study evidenced a markedly greater tendency to selectively perceive pregnant women in the projective test stimuli. In this regard, their perceptions tend to be in keeping with expectations based on the theory of perceptual sensitization. Moreover, the pregnant women who are "selectively tuned" to

perceive cues suggestive of pregnancy in ambiguous stimuli appear to experience relatively little difficulty in the process of childbirth. Thus it appears that this program of investigation, which capitalizes on nature's experiment and real life experiences of crucial significance, may eventually lead not only to greater understanding of personality factors in pregnancy, but may also help to relate clinical application of projective techniques to controlled laboratory research on perception.

SUMMARY

The Thematic Apperception Test (TAT) and draw-a-person test (DAP) were included in a battery of psychological tests administered to 53 pregnant women. This sample was subdivided into a "normal group" and an "abnormal group" on the basis of hospital records of delivery room experiences and childbirth. As predicted, it was found that a significantly greater proportion of the women in the normal delivery group perceived pregnant women in the TAT and drew female figures on the DAP. Moreover, there was highly significant association between perceiving pregnant women in the TAT and drawing female figures on the DAP.

These findings were discussed in relation to previous empirical evaluations of human figure drawings and the vast number of laboratory studies that have been concerned with motivation and perception. It was concluded that investigations such as the present study may not only lead to in-

creased understanding of personality factors in pregnancy, but may eventually serve to strengthen the link between clinical application of projective techniques and theoretically-oriented experimentation on selective perception.

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A Projective Test Analysis of Ethnic Subculture Themes in Families¹

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This study represents an extension of previous exploratory work which indicated that there are marked similarities in the themes or areas of conflict which concern members of the same family over several generations. It seeks to test the hypothesis that ethnic subculture factors play a significant part in determining what theme or problem will be of central importance to a family over a multi-generation period of time. The testing of this hypothesis was carried out by comparing the projective test productions of the members of Jewish and native Texas families.

It is by now a well documented fact that the individuals in a given family share certain common tensions and difficulties which are somewhat unique to that group (Ackerman, 1958; Bronson, Katten and Livson, 1959). This has been especially dramatized in observations of the families of neurotic and psychotic patients. In such families the symptoms of the patient can frequently be shown to mirror the unconscious preoccupations of his family associates. It has even been pointed out (Fisher and Mendell, 1958) that in some instances the symptoms of the patient can be best dealt with not by treating him directly but rather by treating other family members whose conflicts he is inclined to act out. Work by the senior author [in collaboration with David Mendell (1956)] which involved the comparison of Rorschach and Thematic Apperception responses from members of three different generations within families indicated that the shared problem areas of family associates can be observed particularly well via the similarities in their pro-

jective test fantasies. It was found that there are wide variations in the kinds of projective test themes characterizing families. In one family the long term theme may represent a concern about how to find enough sustenance to survive. In another it may focus on the matter of control of anger; and in still another it may involve the problem of how to establish intimacy with people. The question presented itself as to the possible origin of such themes. How might a family come to be preoccupied with a specific problem area? It was speculated that such preoccupation might be a function of the difficulties faced by that family as the result of its long term historical context. That is, it was considered that any chronic source of tension for the family members (e.g., scarcity of necessities of life or unstable status role in the community) could orient them all to a concern with that matter. Theoretically, then, differences in family themes might reflect differences in such diverse variables as nationality, social class status, and geographic location.

Preliminary clinical and projective test observations of the families of patients had particularly suggested the importance of ethnic factors in determining family themes. The ethnic identification of a family seemed to be highly correlated with its theme. It appeared as if the ethnic label of a family somehow summarized important issues with which it had been confronted over an extended period. However, it is important to emphasize that the term "ethnic" is not used in the sense of embracing all members of a particular ethnic origin. It is meant to refer only to a relatively limited sample of an ethnic group which resides in a specific geographical-social context. Therefore it is

¹ This study was supported mainly by a grant from the Hogg Foundation.

probably more appropriate to speak of "ethnic subculture" than to use the broad term "ethnic." Special encouragement for taking an ethnic perspective was provided by a study carried out by Singer and Opler (1956) in which it was clearly demonstrated that in the northeast portion of the United States schizophrenics of Italian extraction manifest symptomatology and conflict areas very different from those shown by schizophrenics of Irish origin. The present study was undertaken to determine whether there are family themes related to the ethnic subculture derivation of a family and whether such themes are present over a multi-generation span.

METHODS AND PROCEDURES

Two contrasting ethnic subculture groups were chosen for study. One group consisted of 14 "native Texas" families residing in Texas for at least three generations that had migrated to the United States from England at some earlier period. The second group was comprised of 14 Jewish families not living in Texas for more than one generation or in the United States for more than three generations and tracing its previous residence to some part of Europe (Germany, Poland, Russia). Representatives of three different generation levels were studied in each of the families. The family members were briefly interviewed concerning their backgrounds and in addition the Rorschach test and the Thematic Apperception Test (cards 1, 2, 5, 6BM, 7BM, 6GF, 7GF, 13G, 17BM) were administered to them. It was the intent to use the projective test data as the basis for evaluating family themes in the two ethnic subculture groups.

Some comments are in order concerning the selective factors involved in the recruiting of the families that served as subjects. Only "normal" families were chosen in which there was no evidence of overt psychosis for a three generation period. The families were contacted through such di-

verse sources as boy scout groups, women's clubs, and personal acquaintances. It is difficult to say what kinds of biasing influences may have been introduced by using such recruitment methods. However, there is no reason to believe that the nature of the biases would operate either in favor of, or against, the hypothesis under study. It should also be mentioned that the chief inducement offered to families to participate in the study was the fact that a fee was paid to them.

RESULTS

As a first step in the analysis of the data the senior author read the Rorschach and the Thematic Apperception Test protocols from each family and formulated a statement for each concerning the family theme or problem area. When this was done, it was found there was an apparent dichotomy between the themes of the Jewish and native Texas families. Thus, the Texans seemed primarily to be in conflict about whether to be the sort of person who carries great responsibility and who achieves in a conscientious manner or to be the sort who wanders freely in the wide open spaces without responsibility. This conflict was reflected in many projective references to tameness vs. wildness, captivity vs. freedom, working hard vs. taking it easy, and enclosed space vs. open space. The theme in the Jewish families seemed to focus primarily on feelings of smallness and inferiority and on sensations of being unclean and of little consequence. There was a concern with feeling inferior and a determination to rise above it and to demonstrate superiority. It was mirrored in the projective responses in images highlighting smallness vs. bigness, the dirty vs. the clean, and the rejected vs. the favored.

The next step in the data analysis was to submit the projective test protocols to the judgment of other raters. Earlier work (Fisher and Men-

dell, 1956) had shown that raters do not have the motivation to make complex judgments concerning large quantities of projective responses in a consistently alert fashion. Therefore it was decided to define the rating task in the present study in such a way that it would involve a complex level of judgment but at the same time be structured so as not to be bewildering in its detail. This was done by first indicating to each rater that his judgments were to concern the presence or absence of two themes in a series of projective protocols. The Jewish and Texas themes were then each briefly defined for him. In defining the themes no material from the protocols themselves was offered in illustration and no mention was made of the themes having been derived from Texas or Jewish subjects. The rater's basic task was to take a series of Texas and Jewish protocols, with all identification removed, and to select specific numbers which he considered to show primarily one theme or the other theme. The protocols presented for rating at any given time usually consisted of three or four comprising the various generation levels of one Texas family and a like number representing a Jewish family. The pairing of sets of protocols from each ethnic group was done randomly. There was one set of protocols which involved comparing not just two families, but rather the protocols of a number of

individuals from a variety of Jewish and Texas families. Altogether, there were nine sets of protocols in which the rater dealt with all of the projective records from only two given families (Jewish vs. Texas) at a time and one set of protocols (five Texas and five Jewish) in which he considered records from individual representatives of a large number of different families. Theoretically it would have been possible to have arranged for ratings to be made of pairings of every single Texas family with every single Jewish family. However, this would have been an enormous task. The compromise solution was to have either each complete Texas family or a representative of the family paired randomly for comparison with either a complete Jewish family or a representative of one.

Three ratings were obtained for each set of protocols. A total of nine raters were employed. Two of the raters evaluated all of the protocols; and seven dealt with from one to three each. In tabulating the ratings, it was decided to use the majority decision as the basis for classification. That is, a given record was designated as Jewish or Texan depending upon the label that had been applied to it by the majority of the judges. Chi square was then employed to determine the relationship of the majority ratings to the actual identities of the protocols. The results indicated

TABLE I. Distribution of Sortings of The Projective Protocols.

	R ^a 1		R2		R3		R4		R5		R6		R7		R8		R9	
	C ^b	I ^c	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I
Set 1 ^d	10	0	10	0	8	2									6	4		
Set 2	6	2	6	2	8	0												
Set 3	8	0	8	0														
Set 4	4	2	4	2					2	6								
Set 5	7	0	5	2							2	4						
Set 6	7	2	7	2									3	4				
Set 7	4	2	2	4			7	2										
Set 8	7	0	3	4											4	2	3	4
Set 9	6	4	6	4														
Set 10	4	4	6	2			6	4										

^a R = Rater

^b C = Correct rating

^c I = Incorrect rating

^d Set 1 is the only set consisting of only single representatives of a number of families.

that the Jewish and Texas patterns could be discriminated successfully in a highly significant fashion [$X^2 = 30.3$ (.001 level)]. It is interesting to note that in those instances where judges had to differentiate all of the members of one family from those of another family they were just as accurate in their judgments regarding the very old and very young members of the families as they were for the other members. Apparently, the family theme is about equally prominent in the productions of all three generation levels of the family.

There was an obvious tendency for judges with five or more years of clinical experience since obtaining the Ph.D. to perform the rating task more successfully than judges with less than this amount of experience. Indeed, when the ratings of the four judges with less than five years of experience were tabulated, they turned out to be less successful than even chance expectancy. The other five experienced raters obtained, of course, far better than chance accuracy in their judgments of the same protocols.

DISCUSSION AND CONCLUSIONS

The overall findings substantiate previous qualitative observations which suggested that in each family there is a theme or problem which is of outstanding importance to its members over numerous generations. Also, the data are clearly congruent with the hypothesis that the family theme is linked with the ethnic subculture identification of the family. The theme which was derived for each of the ethnic subculture groups is certainly meaningful in terms of the historical background of each. The concern of the Texans with issues of taking responsibility vs. wandering freely without fixed obligations might well be expected in terms of the demands imposed upon them by changing conditions to shift from an unstructured frontier style of life

to one that is relatively fixed and routinized in large community settings. Erikson (1950) has described the importance of this kind of conflict in frontier societies in the United States. Similarly, the concern with inferiority vs. superiority found in the Jewish families mirrors vividly the well documented marginal, minority status assigned to Jews in many communities.

The multi-generation continuities which exist in families even in our non-traditional culture lead one to take a special perspective toward the conflicts of the individual person. Apparently, when the individual is born into a given family he is caught up in a powerful directional current which stems from the basic ethnic-geographical facts of life which characterize that family. His central conflicts are those of a subculture rather than mere reflections of the idiosyncratic problems of his parents. His conflicts express difficulties faced by that segment of the culture in which he is immersed. If this be so, one must look with reservation upon any orientation which deals with personal problems and personal disturbance as if they were simply a function of the individual.

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Rorschach Indices of Perceptual and Conceptual Disorganization¹

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In the present study, analysis is made of the organization of the thought processes on the basis of the organizational patterns in Rorschach records of two groups of patients, paranoid schizophrenics and neurotics, each group selected to represent differing levels of disorganization.

Clinically, paranoid schizophrenics show evidence of the kind of conceptual disorganization not observable generally in neurotic patients. They tend to show impairment in thinking,—breaks in reality testing, variability in intellectual functioning, breakdown in intellectual control, peculiar and bizarre thought content, and delusional developments. On the other hand, while neurotics occasionally show similar disorganization in their thought processes, they do not show the degree or the kind of conceptual disorganization manifested by paranoid schizophrenic patients.

Theoretically, marked differences in perceptual and conceptual disorganization should be anticipated in the performance of schizophrenic and neurotic patients. According to ego analytic theory, the functions of the ego include reality testing, intellectual control, and differentiation, organization and integration of experience. It is further hypothesized that whatever we experience is modified by the functioning of the ego through which we experience it. Hence when the cognitive functions of the ego are impaired by pathological conditions, reality testing, intellectual control, differentiation and organization of experience suffer (Klopfer, Ainsworth,

Klopfer & Holt, 1954; Rapaport, 1951; Wyatt, 1953). Rapaport (1946) whose orientation is basically psychoanalytic was one of the first to apply this theoretical framework to the rationale of the Rorschach performance in terms of the interaction of the *associative processes* and the *perceptual-organizing processes*, discussing at length how these processes are influenced by personality characteristics and various kinds of pathology. Theoretically then, since the paranoid schizophrenic more than the neurotic tends to show more impairment in cognitive functions, the former should show more disturbance in experiencing the ambiguous perceptual material of the Rorschach, which demands meaningful interpretations in terms of reality objects and relations.

Thus according to clinical observation and analytic theory, more impairment of the cognitive functions and more disorganization should be manifested by paranoid schizophrenics than neurotics in their responses to the Rorschach material. Conversely, the responses of the paranoid schizophrenics to the Rorschach material should reflect more disorganization of the thought processes and more impairment in ego functioning than those of the neurotics.

For the purpose of this study, we have identified one pattern, the organizational pattern on the Rorschach, and worked with this as our unit of research. Organization refers to the activity of analyzing the blot areas into two or more component parts, projecting forms into them, combining the areas into more complex units and seeing the forms in relationship.

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Beck (1954) was one of the first investigators to make a systematic attack on the problem of organization in the Rorschach for which he used the symbol "Z". He analyzed the various ways in which a group of superior adults combined the figures into larger units, identifying six different kinds of organization and assigning weights in terms of indices of difficulty. A table of Z weights is published for each of the ten cards.

Rapaport (1946) sensed the potentialities in the Rorschach response for analyzing the combinatory, abstracting, and integrating abilities of an individual when it is qualitatively evaluated as a whole. He identified *combination responses*, *construction responses*, *fabulized combinations* and *confabulations*. Fabulized responses, fabulized combinations and confabulations constituted for him a rough sequence of increasingly pathological indicators.

An estimate of organization is also included in the Form-level Rating Scale developed by Klopfer and his colleagues (1954). Ratings are assigned to a Rorschach response to evaluate not only organization but also accuracy (the fit of the concept to the blot areas) and specification (the extent to which elaborations are made). In each of these areas, however, evaluation on different points of the scale involves considerable subjectivity. The scale is especially difficult for the inexperienced worker since no published standards are available for guidance in evaluating form accuracy or "constructive," "irrelevant," and "weak" specifications.

Hertz (1942, 1960) evaluates organizational activity, using the symbol "g". She makes qualitative differentiations in terms of fitness of form to the blot area, vagueness, popularity or originality, the complexity of the relationships seen, and the extent to which the relationships are realistic and constructive or unrealistic, arbitrary or bizarre. The "g" score is weighted for accuracy of fit (F+),

vagueness (v), popularity (P), and originality (O) according to a simple scheme:

1.5 assigned where the forms seen in relationship are fitting and original (O+),

1.0 where the forms seen in relationship are fitting, but neither original, popular, nor vague (+),

0.5 where the forms seen in relationships are popular (P), vague (v), or lacking in fit (-).

The same weighting scheme is used for combinatory responses, where two or more responses taking separate scoring formulae are seen in relationship. The symbols utilized to identify these qualitative differentiations of the organizational acts with weighted scores are presented.

As already indicated in the literature (Hertz, 1942, 1960) Beck's ΣZ wt. shows high correlations with Sum g wt. in two groups of "normal" children, 75 twelve-year-old boys and girls and 57 fifteen-year-old boys and girls, with correlations of $.953 \pm .011$ and $.958 \pm .011$ respectively. It appears unnecessary therefore at least with so called "normal" children to resort to the detailed table of values which one must use to evaluate Beck's Z.

The few studies which have been published on the significance of the organizational score have demonstrated high correlation between the weighted organizational score as recommended by Hertz and Beck and the number of organizational acts, defined as the number of responses involving organization. Many investigators conclude therefore that it is unnecessary and uneconomical to apply weights (Kropp, 1955; Wilson & Blake, 1950).

Other studies have focused on the relationship of the organization score to an index of intellectual level, some investigators showing a positive relationship (Batt, 1953; Sinnett & Roberts, 1956; Wishner, 1948) while others fail to find any relationship (Goldfarb, 1945; Sisson & Taulbee, 1955; Wilson & Blake, 1950). Thetford, Molish and Beck (1952) show

Hertz Organization or "g" Score with Qualitative Differentiations and Weighted Values

Symbol ^a	Weight	Definition
g O+	1.5	Organization where forms involved are fitting and original
g+	1.0	Organization where the forms involved are fitting but neither original, vague nor popular
g v+	0.5	Organization where the forms involved tend to be vague but, by the criterion of frequency, receive a plus score
g P	0.5	Organization involving popular forms
g+ comb	1.0	Organization involved in combining responses which take separate scoring formulae, where the forms involved and the combinations themselves are fitting and appropriate but not original.
g+ O+ comb	1.5	Organization involved in combining responses which take separate scoring formulae, where the forms involved and the combinations themselves are fitting, appropriate and original
Σg+ wt		
<i>Summary Score For All Organizational Responses Where Forms And Combinations Are Fitting And Appropriate</i>		
g O—	0.5	Organization where the forms involved lack fit and are original (infrequent, unique, perhaps absurd or bizarre)
g—	0.5	Organization where the forms are minus, but not original nor vague
g v—	0.5	Organization where forms are vague
g— comb	0.5	Organization involved in combining responses which take separate scoring formulae, where the forms involved are minus and/or the relationships inappropriate but the combination is not too infrequent
g— O— comb	0.5	Organization where responses which take separate scoring formulae are combined, where the relationships seen are inappropriate and unrealistic (whether the forms themselves are fitting or not) and where the combinations are highly infrequent (unique, perhaps absurd or bizarre)
Σg— wt		
<i>Summary Score For All Organizational Responses Where The Forms And The Combinations Are Poor, Lacking In Fit, Inappropriate</i>		
Total Σg wt		
ΣOrg. acts+		<i>Total Score For All Organizational Scores Combined</i>
ΣOrg. acts—		Sum of responses containing organization, where the forms involved and/or the relationships seen are fitting and appropriate
Total Σorg. acts		Sum of responses containing organization, where the forms involved and/or the relationships seen are lacking in fit, unrealistic, inappropriate
		<i>Total Score For All Responses Containing Organization</i>

^a Symbol "+" represents accuracy of fit between blot area and content. It refers to any Rorschach determinant or any combination of determinants in which F+ is included or

implied. Similarly F— refers to lack of fit. It is applied to any determinant where F— is included or implied.

that median weighted Z scores increase with chronological age. Taulbee (1955) working with schizophrenics suggests that Z is related to the ability to engage in verbal abstraction and the ability for concept formation. In groups of mental defectives, Sarason (1950) obtains correlations which point to a close association between the % Z — score and low intelligence. Again Sinnott & Roberts (1956) present evidence that the Z score is related to the selection of highly organized responses in a structured cognitive task (a Reading Comprehension Test). Leventhal (1956), however, questions the validity of the Z scores (and the W score) as indices of intelligence since he finds that perceptual training on closure and Gottschaldt figures have a significant effect on these scores.

The organizational patterns have been studied indirectly by another group of investigators interested in investigating the structural aspects of perceptual functioning in various groups of normal and pathological subjects using the Rorschach as the experimental instrument. Friedman (1953), Hemmendinger (1953), and Siegal (1953) refined the location categories identifying subgroups on the basis of specific criteria which include degree of differentiation, reintegration into a unified percept, form quality and diffuseness of content. Many of the refined scores correspond to the g patterns utilized in the present study.

No direct attack has been made on the power of the organizational pattern to reflect the energy and drive of an individual. Nor has it been directly demonstrated that emotional factors and mental disturbances influence the organizational pattern. It has been shown in several studies however that this pattern in clusters with other Rorschach patterns may characterize different clinical groups, as for example, schizophrenic conditions (Beck, 1954; Thiesen, 1952), paranoid conditions (Beck, 1954), and

manic conditions (Schmidt & Fonda, 1954).

In similar fashion, other hypotheses made in clinical practice have not been subjected to systematic study. It is hypothesized for example that the organizational score tells something of the energy and drive of an individual and the influence of emotional factors and mental disturbances on intellectual functioning. High organizational score is associated with liberated energy and emotional expansiveness; low organizational score with anxieties, constriction, depressed conditions and other emotional interferences. Further, organizational acts involving poor form and individualized content appear to be associated with faulty and irrational thinking, suggesting thought disturbances and even delusional developments (Beck, 1954; Klopfer et al, 1954; Rapaport et al, 1946).

The purpose of the present study is twofold: 1) To study the nature and quality of the perceptual and conceptual organization of two groups of patients at two levels of pathology, and 2) To investigate the acuity of the Rorschach in differentiating these levels of pathology.

It should be emphasized that in concentrating on the organizational pattern, the methodological approach adopted herein is not "atomistic" but "configurational". As indicated by Hamlin (1954) one of the best research approaches with the Rorschach is to study the whole record in global fashion concentrating on one large dimension at a time. The organizational pattern is such a dimension, involving several Rorschach variables related to reality testing, vagueness of perception, commonality in thinking, constructive originality, distorted, arbitrary and/or bizarre thinking, all of which are taken into consideration in evaluating the process of differentiation of areas into parts and their organization and integration into meaningful units. In addition, the present approach involves

both a qualitative and quantitative analysis of Rorschach patterns involved in the organizing acts with a qualitative analysis of the content, style of reacting to the blots, language, and other qualitative features of the Rorschach response.

In the present study, then, the Rorschach record and specifically the qualitatively differentiated organizational patterns are utilized to study the thinking processes of a group of paranoid schizophrenics and a group of neurotic patients. At the same time, the study is designed to explore the power of the Rorschach and specifically the validity of the organizational pattern to detect impaired thinking, primary thought disorders and delusional states. The Rorschach record is scrutinized and the organizational pattern analyzed in the records of two groups of white male patients of the Cleveland Psychiatric Institute and Hospital, thirty-five paranoid schizophrenics and thirty-five neurotics, each group selected to represent varying levels of psychological disorganization.

It is hypothesized that a paranoid schizophrenic group showing more thought disorder than a neurotic group should show more evidence of ego impairment and more disturbance in experiencing the ambiguous perceptual material of the Rorschach. Since the organizational pattern reflects the capacity of the individual to organize parts into meaningful units and to see them in perspective in terms of reality objects and relationships, and since the organizational pattern reflects the influence of emotional conditions and mental disturbance on functioning and personality integration, it should aid in differentiating the level of disorganization represented by the two groups selected for study. The paranoid schizophrenic group should reveal quantitatively and qualitatively different organizational patterns than the neurotic group.

Specifically it is hypothesized that

the schizophrenic group in contrast to the neurotic group should give evidence of:

1. More organizational acts involving poor form ($g-$) and inappropriate and unrealistic combinations ($g-$ comb.) reflecting more impaired reality testing, looseness in the associational processes, and/or personalized thinking;

2. More organizational acts and more combinatory acts which are highly infrequent, unrealistic, and/or bizarre ($g O-$, $g- O-$ comb.) reflecting more instances of personalized, peculiar and/or bizarre thinking;

3. a) More organizational activity projected into detail areas, especially into rare and space areas, reflecting a greater proneness to project meaning into small aspects of situations, especially into their unusual, tiny, or irrelevant aspects, and

- b) More organizational activity with inferior form level projected into detail areas and especially into rare and space areas, reflecting unrealistic and distorted thinking in relation to tiny or irrelevant aspects of situations ($Dr g-$, $s g-$), even in relation to those aspects of a situation to which healthy people usually react ($D g-$);

4. More instances of thinking involving imaginative and fantasy activity out of touch with reality as indicated by the Rorschach $M g-$, hence more regressive and/or autistic thinking;

5. More organizational activity with $FM g-$ reflecting breakdown in reality testing in the process of handling drives and impulses;

6. More organizational activity in a setting of constructive or rigid control (F crude g and F Prim.³ g) reflecting constrained and rigid thinking;

7. More organizational activity in a

³ F Primary refers to all scores when the form is primary, or first, including human movement. These include, besides M , FM , Fin , F Ch, F , $F(C)$, Fc , F Ch', F Ch'', and FC .

setting of anxiety and upset as evidenced by Rorschach patterns m g and uncontrolled Sh g showing the disturbing influence of anxiety and conflict on the thinking processes;

8. More organizational activity involving uncontrolled color (C+CF g) showing impairment of thinking processes by inability to control emotional expression and to fuse emotional integration with reality testing;

9. A lower organizational plus score in the total record (% org.+) reflecting more defective reality testing, less intellectual control, and less mature integrated thinking;

10. Fewer organizational acts involving popular forms (P g) reflecting less adaptability to the thinking of the group and less responsiveness to the conventional;

11. A higher total deviant or original score involving organizational acts (% O g) reflecting more different, distorted, personalized, peculiar and/or bizarre thinking;

12. A lower deviant or original score in the combinatory organizational acts involving appropriate and fitting forms and relationships, reflecting less integrative and combinatory thinking of a high order, and a higher deviant or original score in the combinatory organizational acts involving incongruent and inappropriate forms and relationships, reflecting more personalized, peculiar, and/or bizarre thinking, and suggesting delusional developments;

13. More themes and more fabulized content⁴ in the organizational acts reflecting thought content characterized by fears, morbidity, aggres-

siveness, sexual and/or homosexual preoccupations;

14. a) More personal references to the past in their organizational acts reflecting regressive thinking,

b) More personal references to their present environment or current experiences, expressing preoccupation with present problems and needs to externalize responsibility for ideas, feelings, and performance, and

c) More unique self references, reflecting self preoccupation, inability to separate self from the immediate situation, attitudes of suspicion, and circumstantial thinking;

15. More organizational acts showing "negative" stylistic features such as confabulations, contaminations, autistic logic, fluidity, inappropriate specificity, minus alternatives and reference relationships pointing to peculiar, contaminated and/or confused thinking and thought disturbances;

16. More organizational acts showing "negative" characteristics of style in approaching the blots, in style of communicating responses, and in vocabulary and choice of language, such as pompous, grandiose, esoteric, high-brow, over-precise, stiff, academic, vulgar, or sadistic language.

PROCEDURE

Experimental Groups

In the present study, the attempt was made to obtain as closely equivalent groups as possible in reference to chronological age and mental age, and also in reference to the total productivity or R of each Rorschach record. The seventy individually administered Rorschach records were selected therefore on the basis of the following criteria: 1) The chronological age of the patient was between 20 and 35 years. 2) Diagnosis was restricted to a) paranoid schizophrenic with pronounced symptoms of defective reality standards, inconsistent and illogical reasoning, and primary thought disturbances such as block-

⁴ Fabulized content refers to themes, elaborations and qualifications of responses personally determined, which frequently go beyond the realities of the blot areas, and hence result in unjustified inferences. Such content suggests the projection of personal feelings, moods, attitudes, preoccupations and conflicts. It is often referred to as "overvalent," "personally determined" or "personally saturated" content (Phillips & Smith, 1953).

ing, delusions and hallucinations, and b) neurosis where reality testing was for the most part intact and where there was little evidence of serious thought disturbances. Further, there was no evidence of organic brain pathology in either group. 3) Diagnosis was made on the basis of case history, the presence and degree of pathological symptoms, and other information exclusive of the Rorschach results, as evaluated by staff psychiatrists. 4) In order to control for productivity or R, the total number of responses for each record fell in the range 20 to 30 responses.

The IQs of the patients in each group ranged from low average to superior, as determined by the Wechsler-Bellevue Scales, with a mean IQ for the schizophrenic group being 107.4 and for the neurotic group 104.9. Since it is generally assumed that the organization score varies directly with intelligence, this variable may be said to be controlled. Again, since it has been shown that many of the Rorschach categories depend upon the total number of responses given in a record, it is not likely that the results herein reported are biased by this dependence upon R, since the output of each group is approximately the same by design, (26.7 for the schizophrenic group and 25.5 for the neurotics) and since no significant difference is obtained between the means of the two groups. In addition, the paranoid schizophrenic and the neurotic groups were not significantly different in terms of age, the mean chronological ages being 30.1 and 28.5 respectively.

In order to test the hypotheses formulated, the organizational patterns were analyzed in the protocols of the two groups in terms of the incidence of the qualitatively different g patterns (weighted and unweighted), the number and quality of the location categories, determinants and original forms and the number of popular forms. In addition, themes and elaborations of content suggest-

ing personal saturation, personal and self references, "negative" stylistic features of the organized responses, and "negative" characteristics in style of approach to the blots, in communication, and in vocabulary and choice of language were subjected to study.

The Rorschach scoring categories employed are those developed by Hertz (1942). Form-level accuracy was determined by consulting published Frequency Tables (Hertz, 1951) where the models served as guides for evaluation of the organizational patterns. The content and the stylistic features involved in the organizational acts were taken from the list of qualitative features identified in a previous study (Hertz, 1951) and from those suggested in the literature (Phillips & Smith, 1953; Rapaport, Gill, & Schafer, 1946) designed to define some of the extra-Rorschach features which serve as the basis for the judgment of clinicians in evaluating the Rorschach performance as a whole.

Statistical Analysis

Nonparametric methods were applied to the data in the present study. To study the quantitative relationships of the g variables and the differences between the contrasting groups in amounts of the respective organizational patterns, the Mann-Whitney U test was used. For correlational techniques, the Spearman rank correlation method was employed. The results were also analyzed for their statistical significance by means of the Chi-square test to show the number of patients manifesting one or more of the variables studied or the presence or absence of these variables.

RESULTS AND DISCUSSIONS

Table I summarizes the results for the means and medians of the qualitatively different organizational patterns in the two groups, showing the differences and the probability values

TABLE I. Means and Medians of the Qualitatively Different Kinds of Organizational Acts for the Contrasting Groups

	Paranoid Schizophrenic (N=35)		Neurotic (N=35)		Diff
	M	Mdn	M	Mdn	Z ^b
g O+ wt	1.93	1.50	2.57	1.50	.48
g+ wt	3.94	4.0	4.80	4.0	1.02
g P wt	1.07	1.00	1.19	1.0	.66
g v+ wt	...	0 (65.7) a	...	0 (51.4)	...
g v- wt	...	0 (94.3)	...	0 (100)	...
g- wt	...	0 (77.1)	...	0 (80)	...
g O- wt	1.86	1.5	.50	.5	5.43***
g+ comb wt	...	0 (65.7)	...	0 (71.4)	...
g+ O+ comb wt	...	0 (94.3)	...	0 (74.3)	...
g- comb wt	...	0 (94.3)	...	0 (100)	...
g O- comb wt	1.49	1.0	.07	0 (88.6)	6.25***
Σg+ wt	7.74	7.0	9.76	8.5	1.35
Σg- wt	3.61	3.5	.66	.5	6.42***
Total Σ g wt	11.35	11.0	10.42	9.0	1.19
Σ org acts+	8.49	8.0	10.4	9.0	1.63
Σ org acts-	7.29	7.0	1.34	1.0	6.40***
Total Σ org acts	15.78	16.0	11.74	11.0	1.30

*, **, *** = Significant at the .05, .01, and .001 levels respectively.
aZero medians indicate that more than 50% of the group have not shown the pattern. Where this occurs, parenthetical figures indicate the percentage of the cases in the group which do not show the pattern.
bComparison by means of Mann-Whitney U-Test.

obtained from the group comparisons. It may be noted that no measures of central tendency are presented for organizational acts which involve vague forms (v g) or for g- wt. or g+ comb. wt. since less than 50% of the groups show these patterns.

The paranoid schizophrenics give a median of 16 total organizational acts and a total Σ g wt. of 11.0 as compared to a median of 11 total organizational acts and a Σ g wt. of 9.0 for the neurotics. The difference between total organizational acts (weighted or unweighted) for the two groups is not significant. Thus for the total output of organizing activity, there appears to be no difference between the groups. When, however, the organizing acts are qualitatively differentiated in terms of form level, the differences between the medians for total organizational acts minus (org. acts-) and for the total weighted organizational score minus (Σ g wt.-) show significant differences. The paranoid schizophrenics show more organizing acts and more weighted g

scores which are minus in contrast to the neurotics. When the weighted organizational acts are further differentiated into g O+, g+ (not P or v) and g P, no significant differences are obtained. When the g- combinatory weighted scores are considered, a significant difference appears between the medians for the groups for g O- comb., the paranoid schizophrenics again showing the higher median. When the proportions of the groups giving the qualitatively different kinds of organizational acts are compared,⁵ significant differences are obtained, 94.3% of the paranoid schizophrenics showing g O- and 85.7% g- O- comb. as compared to 57.1% and 11.4% of the neurotics. Again 5.7% of the paranoid schizophrenics show g+ O+ comb. as compared to 25.7% of the neurotics.

⁵ Tables showing these statistical data and those referred to in subsequent pages which are not included are on file at the Cleveland Psychiatric Institute and Hospital. Copies of tables may be obtained upon request.

Hypotheses 1 and 2 are confirmed. The paranoid schizophrenic group, in contrast to the neurotic group, shows more organizational acts involving poor form reflecting more unrealistic and/or personalized thinking, and more organizational acts involving O- forms, reflecting more instances of highly personalized, peculiar and/or bizarre thinking. Further, significantly more paranoid schizophrenics than neurotics function in this manner.

It is of interest that the qualitative differentiations of the g scores are generally more significant than the total weighted score or the number of organizational acts which reflect merely the incidence of organizational activity. Patterns which involve minus form quality seem to be significant while the total weighted g score and total number of organized

acts do not differentiate the contrasting groups. As already indicated, other investigators find that weighted scores are unnecessary since there is a high correlation between the number of organizing acts and the weighted organizational scores. Although Spearman rho correlations between these variables in the present study are also high (.896 for the paranoid schizophrenics and .942 for the neurotics), the fact that organizational acts involving poor form quality are significantly different in these groups suggests that a scoring scheme for organization which takes form quality into account will be more sensitive than one which does not.

Location Areas Involved in Organizational Acts.

When the analysis is made of the areas involved in the organizational

TABLE II. Location Areas with Form Level Involved in Organizational Acts Showing Median Percentages and Proportions of the Group Showing Each Pattern

	Paranoid Schizophrenic (N=35)		Neurotic (N=35)		Difference between Medians ^c		Difference between Proportions	
	Mdn ^a	% of group showing	Mdn ^a	% of group showing	Z	b	X ²	b
W g+	20	100	27.3	100	1.57	..	0	..
W g-	9.4	85.7	3.6	65.7	4.15***	PS	2.80	..
W g	31.3	100	28.1	100	.69	..	0	..
D g+	14.3	94.3	13.3	88.6	.72	..	..	..
D g-	23.8	77.1	..	20.0	..	..	..	..
D g	..	97.1	15.0	88.6	3.30***	PS	22.93***	PS
Dr g+	3.3	60.0	..	14.3	..	..	..	..
Dr g-	..	45.7	..	2.9	..	..	13.25***	PS
Dr g	4.2	74.3	..	14.3	..	..	19.54***	PS
S(S) g	4.2	60.0	..	42.8	..	..	16.12***	PS
s(s) g	7.7	62.8	3.2	51.4	3.51***	PS	1.43	..
S(S) + s(s) g+	..	48.6	4.0	68.6	..	..	.53	..
S(S) + s(s) g-	..	34.3	..	28.6	..	..	2.12	..
S(S) + s(s) g ^b	7.7	74.3	..	71.4	1.95*	PS	.07	..
D + S(S) g+	19.0	97	11.1	91.4	1.91*	PS	.28	..
D + S(S) g-	9.4	77.1	..	31.4	..	..	12.95***	PS
D + S(S) g	28.6	97.1	15.8	94.3	4.10***	PS	..	..
Dr + s(s) + g	6.9	77.1	3.4	62.8	2.36***	..	.58	..
Dr + s(s) - g	4.8	71.4	..	11.4	..	..	31.15***	PS
Dr + s(s) g	12.0	94.3	3.8	62.8	4.30***	PS	..	..
Total areas involved in organization	71.4	..	47.6	..	3.63***	PS	..	..

*, **, *** = Significant at the .05, .01, and .001 levels respectively.

^aMedians computed for patterns shown by more than 50% of the group

^bIn favor of.

^cMann-Whitney U-Test.

acts given by the two groups (Table II), the median percentage of the total number of areas involved based on total R is significantly greater for the paranoid schizophrenic group (71.4%) than that of the neurotic group (47.6%). Thus the paranoid schizophrenics tend to involve more areas in their organizational acts than the neurotics. The following median percentages for the different location categories are obtained for the groups:

Paranoid schizophrenics

31.3% Wg 28.6% Dg 12.0% Dr g

Neurotics

21.1% Wg 15.8% Dg 3.8% Dr g

Here normal and rare space details are included with the D and Dr respectively. Significant differences occur between the median percentages of organizational acts which involve both normal and rare detail areas (D+S(S) g^o Dr+s(s) g) the paranoid schizophrenics showing the higher medians. A large proportion of the schizophrenic group (74.3%) show organization with rare details as compared with 14.3% of the neurotics. Again, when organized space areas are considered separately, (S(S) +s(s) g) the paranoid schizophrenics show a significantly higher median percentage.

Considering the form level in conjunction with the location categories, the paranoid schizophrenic group show significantly higher medians for Wg-, and for both D g+ and Dr g+ when spaces are included. Significantly more of the paranoid schizophrenics organize normal and rare detail areas (including spaces) with inadequate form. It is found that a very high proportion of the paranoid schizophrenics (42.8%) project organization into rare spaces with inadequate form (s(s) g-) as compared with 8.6% of the neurotics.

Since organized space responses

seem to be so differential, an analysis of the nature of the organized space areas in the two groups is of interest. The paranoid schizophrenic group give a total of 24 organized Primary space responses and 69 additional as compared with 9 Primary and 48 additional spaces in the neurotic group. An analysis of how the spaces are used reveals no significant differences between the proportions of the groups using the organized spaces as "openings," "water" or white color. There is however a significant difference in the use of space as solids, since 12 or 33.3% of the paranoid schizophrenics organize spaces as solids as compared to 4 or 14.4% of the neurotics. Such reversals in organizational acts may well suggest the stubborn adherence to ideas so characteristic of some paranoid patients.

Hypothesis 3 is confirmed. The paranoid schizophrenic group in contrast to the neurotic group projects more organizational activity into detail areas, especially rare and space areas, and more organizational activity involving inferior form level into detail areas, especially rare and space areas. Thus the group shows a proneness to organize smaller aspects of situations into which they project their ideas, many of which are unrealistic and distorted. Again more of the schizophrenic group organize spaces perceived as solids.

Determinants Involved in Organizational Acts

In Table II⁷ it may be noted that significant differences occur between the median percentages for $\Sigma m + (m)$ g, C+CF g, F crude g, F Prim g+, with significant trends being suggested for Σc resp g, in all cases the paranoid schizophrenics showing higher medians. No significant differences are obtained between the medians for the other determinants studied. Again we find that while no

⁷ Parentheses refer to spaces used in conjunction with other location categories called "additional" or "tendencies" in the literature.

⁷ The summation symbol (Σ) before a determinant refers to all organizational acts involving that determinant irrespective of the presence, absence, or primacy of form.

TABLE III. Determinants Involved in Organizational Acts for Contrasting Groups

	Paranoid Schizophrenic (N=35)		Neurotic (N=35)		Difference between Medians ^c		Difference between Proportions	
	Mdn ^a	% of group showing	Mdn ^a	% of group showing	Z	b	X ^a	b
M g	7.2	91.4	5.3	85.7	.66	..	.07	..
M g—	..	31.4	..	8.6	..	..	4.38**	PS
FM g	9.5	91.4	10.0	85.7	1.40	..	.07	..
FM g—	..	45.7	..	11.4	..	..	8.47**	..
Σm+(m) resp g	3.3	60.0	2.2	40.0	1.89*	PS	1.97	..
ΣSh resp g	..	40.0	..	37.1	..	..	0	..
Σc resp g	9.7	91.4	6.9	82.8	1.36	..	.26	..
C+CF g	5.0	74.3	3.7	71.4	1.70*	PS	0	..
ΣC resp g	7.2	74.3	4.6	71.4	.42	..	0	..
F crude g	17.9	..	8.7	..	2.59**	PS	..	..
F Prim g	55.9	..	36.9	..	3.82***	PS	..	..
org+/Σorg	55.6	..	92.3	..	6.46***	Neur	..	..
F Prim g+/	..	..	..	..	..	..	..	..
ΣF Prim g	74.3	..	100.00	..	5.58***	Neur	..	..

*, **, *** = Significant at the .05, .01, and .001 levels respectively.

^aMedians computed for patterns shown by more than 50% of the group

^bIn favor of.

^cMann-Whitney U-Test.

significant differences occur between the number of paranoid schizophrenics showing M g or FM g, as compared to the neurotics, significantly more of the former show M g— and FM g—.

Present data tend to confirm Hypothesis 4. Significantly more of the paranoid schizophrenics show autistic and regressive thinking in their organizational acts as represented by the M g—. Hypothesis 5 is also confirmed. More of the paranoid schizophrenics than neurotics show FM g— suggesting breakdown and unrealistic thinking when trying to handle impulses and withstand frustration and stress. Similarly Hypothesis 6 is verified. The paranoid schizophrenic group gives on an average more organizational responses characterized by impersonal reactions, stripped of emotional and imaginative qualities as evidenced by a higher median F crude g.

In respect to shading in general (Sh), no significant difference appears between the median percentage for ΣSh resp g or between any of the medians for the shading categories

taken separately, although a tendency is indicated for the paranoid schizophrenics to give more organizational acts involving texture (Σc resp). In relation to natural and artificial movement, paranoid schizophrenic patients give more organized acts involving movement in nature and artificial happenings (Σm+(m)) which we hypothesize reflect tension and inner conflict. Thus Hypothesis 7 is only partially confirmed. The paranoid schizophrenic group show more organizational activity in a setting of turmoil and inner conflict as reflected by the m category, but do not show more of the kind of anxiety reflected by the shading factor in general. They show a trend, however, toward experiencing more of the kind of anxiety (c) which stems from unsatisfied contact or erotic needs.

In reference to color, the paranoid schizophrenics show on an average more organizational activity involving unstable color (C+CF g) reflecting intense and uncontrolled emotional reactions and potentiality for violent outbursts. Further, more paranoid schizophrenics show organizational ac-

tivity involving crude color. They appear to infuse their organizational activity with more diffuse, primitive, perhaps arbitrary and inappropriate emotional reactions. Hypothesis 8 is confirmed. The paranoid schizophrenics give evidence of more organized thinking in a setting of chaotic emotions.

The groups are compared for overall form-level quality in their organizational acts in order to evaluate realistic thinking, intellectual control, and integrated thinking in general. Two patterns are employed, org.+ / org. based on form level without respect to the primacy of form and F Prim g+ / F Prim g based on form level where form is the primary determinant (See note 3). Many clinicians view the latter pattern as the better index of reality testing and control (Hertz, 1942; Rapaport et al., 1946; Schafer, 1954). It may be seen in Table II that the difference between the median percentages for the pattern estimating form level in the organizational acts are significant both when form level accuracy is computed on the basis of the total number of organizational acts given and on the basis of the total number of F primary g given, the paranoid schizophrenics showing much lower median percentages. Hypothesis 9 is substantiated. The paranoid schizophrenics in contrast to the neurotics are more often unable to organize the blot material into fitting and appropriate concepts. They show more unrealistic, distorted and personalized thinking, less stability and control, and in general less mature integrated thinking.

Organizational Acts Involving Popular Forms (P g)

No difference appears between the medians of the two groups for the organizational acts which involve popular forms. Hypothesis 10 is not confirmed. The paranoid schizophrenic patients do not show in their organizational acts less evidence of adaptability as measured by the Ror-

schach P. In general, they appear to be able to share ways of perceiving things in their environment to approximately the same extent as the neurotics even though they show thought disturbances. The analysis of the number of P g is of little value in reflecting significant differences in the thinking of the two groups. Qualitative analysis of the specific P g which are given and of the P g failures might have been more rewarding.

Organizational Acts Involving Originality (O g)

Analysis of the number and quality of the organizational acts involving originality reveals significant differences between the medians for Σ O g and Σ O g-, the paranoid schizophrenics showing higher medians. When separate computation is made of the combinatory organizational acts involving originality, 85.7% of the paranoid schizophrenic group gives g O combinations as compared to 34.3% of the neurotics. Again 85.7% of the paranoid schizophrenics show g- O- combinations as compared to 11.4% of the neurotics. The differences between the proportions of the groups showing these patterns are highly significant. Again only 5.7% of the paranoid schizophrenic group show g+ O+ combinations as compared to 25.7% of the neurotic group.

Hypothesis 11 is confirmed. The paranoid schizophrenic group in comparison with the neurotic give a higher total deviant or original score in their organizational acts reflecting more distorted, personalized, peculiar and/or bizarre thinking. Hypothesis 12 is also confirmed. The paranoid schizophrenic group show a lower original score in the combinatory organizational acts involving appropriate forms and fitting relationships and hence show less mature integrative thinking of a high order. Similarly, they show a higher original score in the combinatory organizational acts involving incongruent and inappro-

priate forms and relationships and hence show more personalized, peculiar and/or bizarre thinking and possibly delusional thinking.

Content Involved in the Organizational Acts

No differences are noted in the number of content categories as traditionally defined in the organizational acts of the two groups. Studying the fabulized content however, we note that a large proportion of both groups manipulates the human figures in some manner in their organizational acts, minimizing, reducing, or distorting them, suggesting difficulty in their conception of or relationships with people. A significantly larger proportion of the paranoid schizophrenics however utilize imaginary animals in their organizational acts, which may reflect their greater immaturity, greater anxiety in dealing with people and hence their need to dehumanize the human figure which may stem from homosexual conflicts. A significantly larger proportion of the paranoid schizophrenics give a total of anatomy, sex, anal and oral content in their organizational acts. Indeed, significantly more paranoid schizophrenics show two or more anal themes.

Again significantly more of the paranoid schizophrenics give specific body parts and articles of clothing in their organizational acts, which may well reflect the concern of the paranoid schizophrenic in reference to the body image. Analysis of "body parts" shows organization of "mouths," "teeth" and "gums" on the part of many more paranoid schizophrenics, suggesting oral demanding needs and/or deep disguised hostility. Again more of the paranoid schizophrenics show a proneness to include in their organizational acts "eyes leering, peering or watching," or "big eyes," "tiny slits for eyes" and "covered up eyes" pointing to their suspiciousness and/or fear of being under scrutiny. All the differences noted are significant.

When data were scrutinized for homosexual indications, consisting of those items identified in the literature (Phillips et al., 1953; Schafer, 1954; Wheeler, 1949)—general sex content, frank homosexual content, animals substituted for human figures, sex blurring, sex confusion, double identification, sex reversals, nudity, anal content, back-to-back concepts, cleavage concepts, and elaborations reflecting depreciation of the human figure—a significantly greater proportion of the paranoid schizophrenics (71.4%) compared with 40% of the neurotics, show four or more indications of themes and elaborations of this nature in their organizational acts. Many clinicians hypothesize that the paranoid schizophrenic possesses strong homosexual tendencies which strive for expression in consciousness and in reality. This is suggested by present data.

It is likewise observed that more of the paranoid schizophrenics project "coverings" in their organized acts. These include both cloaking concepts (articles of apparel) and also coverings such as blankets, shrouds, drapes, sheets, even some emblems and shields. Such content frequently reflects the greater need on the part of the paranoid schizophrenic to disguise sex interests.

Only eight of the paranoid schizophrenic patients include such content as germs, bacteria, or disease in their organizational acts as compared to one neurotic, suggesting morbid body preoccupation, morbid fear of bodily harm and morbid concern with personal decay. Again, while seven paranoid schizophrenics include edibles in their content, only one neurotic gives this category. Edibles appear to reflect oral preoccupations and needs for childish gratifications.

No significant differences are observed with the other themes studied, such as adornment, weight-balance, fire forms, religious and status themes.

Studying the proportions of the groups giving organized acts involving

content with affective loading in terms of dysphoric elaborations (frightening, threatening, gruesome, strange, weird qualifications and themes of disease, coldness, barrenness, damage, disintegration, distortion, destruction, depression and death) and euphoric elaborations (light, airy, happy, idyllic qualifications), no differences appear. We note that comparatively few patients in the two groups show themes or qualifications suggestive of euphoric feeling, tone, or mood. Many in each group, however, 41% of the schizophrenics and 25% of the neurotics, show dysphoric elaborations in their organizational acts. This may be due to the blots themselves which appear to induce more dysphoric reactions or it may be characteristic of the thinking and the mood of the patients themselves.

The sado-masochistic category is restricted to aggressive activity which involves violation of tissue or material or the result of such violation. It is found that 45.7% of the schizophrenics and 20% of the neurotic patients give two or more sado-masochistic themes or elaborations in their organizational acts. Thus significantly more of the schizophrenic patients indulge in a kind of thinking which involves violence, destructiveness or assault and more express ideas of personal damage, mutilation and punishment.

Abstractions occurring in organizational acts are rare. Yet 25.7% of the paranoid schizophrenic patients give organized abstractions as compared to 5.7% of the neurotics. Compared with neurotics then, the paranoid schizophrenics tend to express more repressive phenomena in symbolic form and show more regression and negativism, inferences we make clinically for the use of abstractions.

Hypothesis 13 is partially confirmed. More paranoid schizophrenic patients than neurotics show fabulized content in their organizational acts, reflecting body, sexual and/or homosexual preoccupations, suspiciousness, and sado-masochistic orientation.

No differences are noted between the groups for the general categories of aggressiveness, dysphoric and euphoric themes or elaborations.

The study of the extent of "ordering" involved in the organizational acts reveals no differences between the groups. "Ordering" refers to attempts at explanation and rationalization of the concept given by an individual in terms of a) arts, sciences, cultures, disciplines, b) personal experiences in the past, current personal experiences, (dreams, movies, T.V. books) and references to the immediate environment, and c) self references which include self depreciation, self analysis and unique self references (self in direct reference to the blot or to some aspect of the concept). We might anticipate that the thinking of the paranoid schizophrenic in contrast to that of the neurotic would be influenced more by his own personal and peculiar life-pattern and that this would be reflected in his references to his past, his present environment or current experiences. This is not borne out in the "ordering" as defined here. Again, unique self references are frequently ascribed to paranoid schizophrenics. In the present study, only seven patients give unique self references in their organizational acts as compared to four neurotics. Thus Hypothesis 14 is not confirmed. More paranoid schizophrenics do not incorporate in their organized acts references to their past or to their present, nor do they refer more to current personal experiences. Few of the paranoid schizophrenics give unique self references.

When the data on organizational acts are studied for such "negative" features as minus alternatives, confabulations, peculiar responses, autistic logic, concretization, contamination, elliptical expressions, fluidity, reference relationships, inappropriateness, transpositions and incoherence, many of the items occur so infrequently that they cannot be sub-

jected to statistical treatment. Significant differences between the groups are observed however in the use of autistic logic, contaminations, minus alternatives, the seeing of figures and objects in peculiar positions and perseveration of highly personalized themes, a higher proportion of the paranoid schizophrenics showing these features compared with the neurotics. When overall bizarreness as defined by Phillips et al. (1953) is considered, 85.7% of the paranoid schizophrenics show bizarreness of some kind in their organizational acts as compared to 17.1% of the neurotics. Thus more paranoid schizophrenics try to rationalize their responses by giving "logical" reasons which are far-fetched and illogical, more show evidences of confused and contaminated thinking, more stick rigidly to their ideas, and more show general bizarreness in their mental procedure and thought content. In a word, significantly more paranoid schizophrenics show certain qualitative features in their organizational acts which point to extreme impairment of reality testing and disorganization of thinking, confirming Hypothesis 15.

When peculiar styles in reacting to the blots (emphasis on symmetry, asymmetry, "twoness," midline, projections, indentations, inside areas, incidental areas, manipulation of areas), in communicating (confusion, demur, meticulousness, repudiation of response, one response per card, etc.) are studied, no significant differences are noted between the groups. In studying certain peculiarities of language, however, significantly more paranoid schizophrenics than neurotics use academic and pseudo-intellectual language, overprecise, stiff and stilted language and redundancy, and in general more paranoid schizophrenics show one or more peculiarities of language usage. Hypothesis 16 is therefore partially confirmed. More of the paranoid schizophrenics than neurotics show "negative" characteristics in vocabulary and choice of

language. No difference appears however in those aspects of the style in reacting to the blots or in communicating responses selected for study.

SUMMARY

The records of 35 male paranoid schizophrenic patients and 35 male neurotics of approximately the same chronological age and I.Q. were analyzed to study the nature and quality of their perceptual and conceptual processes and to determine the extent to which the Rorschach organizational pattern can discriminate between them. The records selected contained a specified range of responses, 20 to 30. Various sub-categories of the organizational response were identified to represent qualitative differentiations of the organizing activity. Organizational patterns were analyzed in terms of their quality and distribution, their presence or absence in a record, and in terms of specific themes, fabulized content, stylistic features of the responses, and peculiarities in choice of vocabulary and language. All Rorschach data were analyzed by non-parametric methods.

The general hypothesis was advanced that the paranoid schizophrenic group showing severe thought disorders reveals qualitatively different organizational patterns than a group of neurotics without these symptoms. The general hypothesis was confirmed. More of the paranoid schizophrenic patients showed organizational patterns reflecting ego impairment and disturbance in experiencing the ambiguous perceptual material of the Rorschach.

Of the 16 specific hypotheses which were formulated in terms of the organizational patterns, 11 were confirmed. In contrast to the neurotic group, more of the paranoid schizophrenic patients showed

1. more organizational acts involving poor form (g -) and inappropriate and unrealistic relationships (g - comb), (Hypothesis 1),
2. more infrequent, unrealistic, and

uniquely organized concepts reflecting a high degree of personal saturation in thinking and considerable peculiar and bizarre thinking ($g\ O-$, $g- O-$ comb, $\%O\ g$, $\%O\ g-$), Hypotheses 2, 11, 12),

3. more proneness to organize detail areas and space areas, with impaired form level ($D\ g-$, $D+S(S)\ g$, $Dr\ g-$, $Dr+s(s)\ g$), (Hypothesis 3),

4. thinking involving imaginative and fantasy activity out of touch with reality ($M\ g-$), (Hypothesis 4),

5. breakdown and unrealistic thinking when handling impulse life and when trying to withstand stress and frustration ($FM\ g-$), (Hypothesis 5),

6. more organizational activity in a setting of constrictive or rigid control ($F\ crude\ g$ and $F\ Primary\ g$), (Hypothesis 6),

7. more tendency to infuse organizational acts with chaotic emotions ($C+CF\ g$) and with diffuse, primitive, perhaps arbitrary and inappropriate emotions ($Crude\ C\ g$), (Hypothesis 8),

8. more organized responses showing impaired, unrealistic and immature thinking and lack of control and steadiness ($\% org+$), (Hypothesis 9),

9. more organizational acts reflecting a lower order of integrative and combinatory thinking and incongruent and inappropriate relationships suggesting delusional developments ($g- O- comb$), (Hypothesis 12),

10. "negative" stylistic features of the organizational acts themselves such as contaminations, autistic logic, minus alternative, perseveration of personalized themes, objects in peculiar positions and in general more bizarreness (Hypothesis 15),

Three other hypotheses are partially substantiated. More of the paranoid schizophrenic group in contrast to the neurotic show

1. a tendency to infuse organizational acts with feelings of tenseness and conflict ($m\ g$), (Hypothesis 7),

2. evidence of fabulized content in organizational acts reflecting body, sexual and/or homosexual preoccupations, morbidity, and sado-masochistic orientation (Hypothesis 13),

3. peculiarities in choice of vocabulary and language (Hypothesis 16),

The present data do not substantiate the hypotheses made which anticipate that more of the paranoid schizophrenic group would show:

1. the kind of anxiety reflected by the general shading category, although a trend is noted for more organizational acts involving texture to appear suggesting the expression of more anxious feelings stemming from erotic needs (Hypothesis 7),

2. less adaptability to thinking of the group as evidenced by the Rorschach P (Hypothesis 10),

3. personal and self references in conjunction with the organizational acts (Hypothesis 14).

The present study suggests that certain organizational patterns are especially characteristic of the paranoid schizophrenic group in contrast to the neurotic and hence may be associated with paranoid schizophrenic conditions rather than neurotic. These patterns include especially $g-$ and $g-$ combinations projected into normal and rare areas, including space areas, utilizing M , FM , m , $F\ crude$, and $CF+C$ determinants, personally saturated content reflecting body, sexual and homosexual preoccupations, morbidity, and sado-masochistic trends, and showing negative stylistic features as contamination, peculiar position, minus alternatives, perseveration of personalized themes and bizarreness and peculiarities in language and choice of words. Further, a low $\%$ organization plus score is associated more with the paranoid schizophrenic picture.

If delusional thinking is viewed as false beliefs peculiarly out of keeping with the external stimulus and beyond the bounds of reality, beliefs which are based on misinterpretation and unjustified inferences, the $g\ O-$

and the g— O— comb patterns with unique, peculiar or bizarre content or with content showing a high degree of personal saturation may reflect such delusional thinking. If such patterns persevere in a record, they may well suggest systematized delusions.

If we were to attempt an interpretation of the present results obtained with the Rorschach organizational patterns utilizing the interpretive hypotheses that are applied clinically, they would suggest that the thinking of the paranoid schizophrenics compared with that of the neurotics shows more breakdown in ego functioning. While the paranoid schizophrenics are capable of considerable differentiated and integrated thinking, it is characterized more by impaired reality testing, looseness in the associational processes, unsteadiness, lack of control, immaturity, autism and regression. The paranoid schizophrenics show a proneness for more detailed analysis of situations with frequent emphasis on and distortion of the tiny, minute, and irrelevant aspects and even with frequent distortion of the usual and obvious aspects. They likewise tend to see inappropriate and unrealistic relationships which often result in illogical and absurd interpretations and delusional developments. Further, their thinking tends to be influenced and disrupted more by their impulses, by their inability to withstand frustration and stress, by chaotic emotions and by anxious feelings, many of which seem to stem from erotic needs. Their thought content shows a high degree of personal saturation, with considerable morbidity, body and sex preoccupation, sadomasochistic ideas, and strong homosexual tendencies which strive for expression in consciousness and in reality. In expressing their thoughts, they are prone to show peculiarities in choice of vocabulary and language.

CONCLUSIONS

It is concluded that the Rorschach Method may be an important aid in

analyzing the nature of the thought processes and in detecting thought disturbances and delusional states in paranoid schizophrenic and neurotic patients. The organizational pattern studied in terms of its quantitative and qualitative features, and in terms of thematic analysis and mode of verbalization reveals much about how the patient organizes Rorschach reality, what he sees in it, and the extent of impairment in the cognitive processes involved in reacting to reality. Since qualitatively different organizational patterns appear in the paranoid schizophrenic group known to show thought disturbances in areas other than the Rorschach situation, it may be hypothesized that the kind of organizational ability sampled by the Rorschach performance may well extend to areas other than the Rorschach and that the paranoid schizophrenic patient will organize his thinking and his activity in similar fashion and show similar impairment in his cognitive functioning in general. We could extend this generalization further and say that the Rorschach performance may well reflect the nature of his general functioning and personality integration.

Present results also demonstrate that mental disturbance and emotional conditions influence the organizational pattern. The organizational pattern therefore cannot and should not be interpreted in isolation. It must be evaluated in terms of other aspects of the Rorschach record, including content analysis and qualitative features not included in the more formal Rorschach scoring.

Finally, it is demonstrated by present results that the scheme of weighting organization in terms of the quality of the forms and of the relationships seen, is of greater value in characterizing the cognitive functioning of groups of different levels of pathology than the procedure of employing the mere sum of the organizing acts.

From the point of view of methodology, the present study confirms the

conclusions of Hamlin (1954) that when Rorschach patterns are qualitatively evaluated in small but global contexts, they may be proven valid and useful as diagnostic aids in differential diagnosis.

The present study is a group study and the differences reported group differences. For application to the individual case, these results must be viewed as hypotheses which must be tested and verified through further controlled research. The study demonstrates, however, that the organizational pattern, if studied qualitatively in terms of formal Rorschach scores, thematic analysis, and stylistic features of the response, is highly effective in differentiating a paranoid schizophrenic group from a neurotic group.

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A Study of the Metaphor¹

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In an earlier article the writer (1958) presented evidence indicating that *n* Achievement is significantly related to certain attitudes towards time. In that study a scale of metaphors was employed in order to sample time attitudes. The present study is concerned with the extension of the metaphor technique for the measurement of conceptual formulations of a number of macroscopic life parameters. In this study the time metaphor scale with slight revisions was combined with five new metaphor scales, namely, those dealing with conscience, death, success, love, and self image.

A word should be said concerning the metaphor scale as a measure of attitude. Asch (1958) in a very interesting cross-cultural study of language has shown the tendency for similar metaphorical figures to occur in widely disparate linguistic groups, suggesting that common attitudes may be expressed by similar devices in many varying cultures. Other studies of metaphorical usage have occurred in psychoanalytic literature. Here frequent allusions have been made to two kinds of thought processes, namely, the primary and the secondary. The primary thought processes govern essentially the mechanism of the dream construction and some types of psychologically primitive conscious fantasy such as found in schizophrenia. The secondary thought processes are those typically associated with the reality principle and are directed towards the effective coping with the environment. Each of these has its distinctive, logical structure. The secondary thought processes are in the

main dominated by a so-called Aristotelian logic while the primary thought processes are ruled by a paleologic (Von Domarus, 1946). The distinction between these two logic systems is best understood by considering the problem of logical equivalents. In the Aristotelian system, as the classical syllogism illustrates, two objects may be considered equivalent only when they are *substantively* identical. Thus, to prove that Socrates is mortal, one must first assert that he is a man and that all men are mortal. In the paleological system, however, there is no requirement for *substantive* identity. Here things are rendered identical by virtue of their possessing certain salient attributes in common. Their substantive categories may be profoundly different. It will be readily seen that the second system of logic is that which dictates the appropriateness of dream symbolism. Here the common attribute may be configurational similarity, similarity of use or function, similarity of occurrence in time or place, etc.

In terms of this analysis, the metaphor as a literary and poetic device bears a striking resemblance to dream symbolism. The appropriateness and effectiveness of the metaphor lies primarily in its capacity to equate two widely divergent objects or situations by virtue of a common attribute. The skill of the poet, in short, so far as the metaphor contributes to his literary excellence, lies in his capacity to recognize this principle of equivalence.

In framing a series of metaphor scales, the writer desired to obtain a measurement of deep-lying attitudes which frequently escape conscious expression. This technique has deliberately encouraged the subject to surrender his normal intellectual controls and base his responses essentially

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upon the principle of paleological appropriateness since he was instructed to evaluate the metaphors for their "poetical" appropriateness. This has permitted the measurement of certain attitudes difficult to elicit by any ordinary interviewing techniques. In earlier stages of experimentation, subjects were interrogated concerning their conceptions of time. Almost invariably they referred to principles of physics, either formal or implicit. The same experience was encountered in discussing attitudes toward death. Thus, the writer believes that the metaphor scale in which the individual is urged to adopt a "poetical attitude" circumvents a great many of the formal intellectualized conceptions of the individual.

It cannot be claimed that any particular logic dictated the selection of the six variables examined in this study, save that each of them represents an area of life experience which is phenomenologically central to a person's awareness. Of the six scales, four, namely those for success, time, death, and conscience, have been pre-tested and brought to a reasonably final form. The scales for love and self image, on the other hand, had not been pre-tested and were essentially provisional and untried. Both of these are currently undergoing further revisions.

METHOD

The several metaphor scales considered in this study were constructed in the following manner. A provisional collection of metaphors descriptive of the concept in question were first assembled from a variety of sources, including standard quotation references such as Bartlett's (1955) as well as figures drawn elsewhere from established literature. To these were added a number of the writer's invention and those contributed by friends and acquaintances. In the case of the four pre-tested scales, the metaphors were submitted to a group of approximately 40 student subjects with the request

that they designate their poetical appropriateness on a seven-point scale. Thereafter eliminations were made to exclude figures preponderantly judged as especially appropriate or inappropriate as well as those which were essentially tautological. Thus, the final 25 metaphors were selected for each of these scales. As noted above, the scales for love and self image had not been so pre-tested and were constructed on a simple *a priori* basis. It should be borne in mind that the object of these scales is to incorporate "controversial" images, e.g., images concerning which particular individuals might hold divergent evaluations. Thus, these metaphors were not selected for their poetical merit but rather for their capacity to discriminate attitudinal differences between subjects.

The subjects employed in this experiment consisted of 136 undergraduate women and 87 undergraduate men enrolled at the University of California, Berkeley. They were presented the metaphor scales with the following instructions:

Below are a number of images which might be employed by a poet or writer to symbolize the idea of (conscience). Read them over carefully and then rate them for their capacity to evoke for you an effective image of the nature of (conscience).

They were then asked to rate the 25 metaphors on a seven-point scale, assigning one to the first category, three to the second, five to the third, seven to the fourth, five to the fifth, three to the sixth, and one to the seventh or least preferred category. A form was provided for the recording of these judgments.

RESULTS

The first step in the analysis consisted of the calculation of the means and standard deviations of each of the scales as shown in Table I. Here the number "7" was assigned to the most preferred category and the number "1" to the least preferred. There-

TABLE 1—Means and Standard Deviations for Both Men and Women Subjects for All Items on Six Metaphor Scales

Self Image	Male		Female		Male		Female		
	X	S.D.	X	S.D.	X	S.D.	X	S.D.	
1. a burning candle	4.82	1.41	5.14	1.19	4.14	1.18	4.01	1.27	
2. a ship sailing through mist	5.20	1.28	5.27	1.06	4.07	1.44	3.86	1.33	
3. a bird rising in flight	5.45	1.12	5.29	1.08	4.67	1.39	4.64	1.33	
4. an electric generator	4.46	1.23	4.02	1.32	4.08	1.05	4.22	1.20	
5. a wandering cloud	4.80	1.15	4.95	1.04	5.18	1.16	4.91	1.04	
6. a teeming jungle	4.04	1.32	3.85	1.20	3.90	1.20	4.29	.99	
7. a grinding millstone	4.13	1.19	3.73	1.07	4.40	1.35	4.26	1.50	
8. a humming teakettle	3.89	1.02	4.52	1.19	4.09	1.51	3.63	1.40	
9. a beetle in a sand pit	3.13	1.37	3.21	1.34	3.18	1.40	3.05	1.30	
10. a waterworm pebble	3.55	1.17	3.66	1.11	2.53	1.52	2.15	1.12	
11. a wave in the ocean	4.76	1.07	5.23	1.22	3.09	1.33	3.11	1.36	
12. a shaft of light	4.92	1.24	4.75	1.14	2.88	1.30	2.72	1.35	
13. a basking fish	3.68	1.10	3.56	.97	3.64	1.12	3.80	1.02	
14. a splashing fountain	4.49	1.03	4.94	1.07					
15. a racing horse	4.18	1.16	3.98	1.05	3.84	1.35	4.02	1.39	
16. a yolk of an egg	3.00	1.32	2.98	1.34	3.19	1.19	3.43	1.32	
17. a phonograph record	3.34	1.13	3.46	1.03	4.03	1.29	4.19	1.17	
18. a balloon drifting in the sky	4.44	1.09	4.60	1.07	4.18	1.28	3.91	1.16	
19. a flying kite	4.42	.85	4.52	.98	5.15	1.23	5.30	1.02	
20. a stone wall	3.83	1.20	3.10	1.13	4.73	1.04	4.99	1.21	
21. a sheathed sword	4.59	1.26	3.65	1.17	3.65	1.21	3.96	1.30	
22. a violin	3.76	1.10	3.95	1.10	3.20	1.09	3.05	1.16	
23. a trapped moth	2.73	1.26	2.96	1.33	5.17	1.25	5.32	1.24	
24. a withered rose	2.39	.96	2.52	1.18	4.53	1.24	4.55	1.33	
25. a sunken boat	2.09	1.09	2.21	1.03	4.46	1.64	4.25	1.45	
Time					12. a vicious bully	2.70	1.10	2.34	1.02
1. a large revolving wheel	4.48	1.22	4.23	1.21	13. a dam in a river	4.56	1.18	4.47	1.29
2. a whirligig	3.04	1.18	3.16	1.07	14. a tedious sermon	4.00	1.07	3.60	1.05
3. a road leading over a hill	4.51	1.31	4.66	1.32	15. a just judge	4.48	1.50	4.41	1.37
4. budding leaves	4.19	1.31	4.52	1.46	16. a secret map	4.11	1.19	4.22	1.12
5. an old man with a staff	4.14	1.52	4.25	1.35	17. an uncomfortable bed	3.98	1.10	3.93	1.15
6. a bird in flight	4.37	.98	4.51	.96	18. a pillar of a temple	4.32	1.45	4.21	1.37
7. a fast-moving shuttle	3.62	1.01	3.70	1.09	19. a swarm of flies	2.56	1.60	2.79	1.49
8. a winding spool	3.97	.97	4.07	1.12	20. a treasured book	3.93	1.51	4.02	1.37
9. a speeding train	4.19	1.21	4.30	1.19	21. a threatening father	3.37	1.28	3.46	1.14
10. a quiet motionless ocean	4.90	1.55	4.84	1.68	22. a harbor buoy	4.60	1.28	4.28	1.28
11. a burning candle	4.93	1.33	5.02	1.20	23. a secret betrayer	3.42	1.19	3.45	1.25
12. a stairway leading upward	3.96	1.46	4.06	1.31	24. a secure fortress	4.04	1.38	4.02	1.33
					25. a vexing itch	3.58	1.44	3.83	1.51

TABLE I—Means and Standard Deviations for Both Men and Women Subjects for All Items on Six Metaphor Scales

Death	Male		Female			Male		Female	
	X	S.D.	X	S.D.		X	S.D.	X	S.D.
1. a satanic wrestler	2.71	1.26	2.91	1.19	13. a cocktail before life's dinner	4.43	1.38	4.18	1.25
2. a hothouse full of lilies	3.16	1.28	3.43	1.38	14. a self-replenishing fountain	5.17	1.35	5.54	1.24
3. a trumpet	3.44	1.38	3.71	1.49	15. brave and joyful eyes	5.26	1.37	5.36	1.11
4. a shadowed doorway	4.82	1.10	5.07	1.07	16. violins and golden trumpets	4.46	1.12	4.70	1.16
5. a toppled house of cards	4.08	1.25	3.97	1.26	17. a tongue of flame	4.17	1.28	3.61	1.05
6. windswept leaves	4.53	1.26	4.64	1.28	18. a covenant	4.44	1.37	4.70	1.34
7. a gentle veiled lady	4.19	1.35	4.27	1.20	19. a stairway to paradise	4.63	1.48	4.98	1.10
8. a crumbling tower	4.60	1.16	4.46	1.04	20. skating on gingerale	3.94	1.15	3.71	1.13
9. a chilling frost	4.27	1.28	4.11	1.06	21. a tempting trap	3.76	1.00	3.65	1.02
10. a falling curtain	4.48	1.00	4.64	1.15	22. an upraised spear	3.23	1.14	2.90	1.01
11. a hangman with bloody hands	3.72	1.92	3.77	1.78	23. a diving airplane	3.13	1.15	3.02	1.00
12. silent birds	4.53	1.01	4.99	1.11	24. a tarbaby	2.51	1.29	2.59	1.18
13. a misty abyss	5.11	.99	5.03	1.07	25. a feverish madness	3.76	1.08	3.91	1.22
14. a bursting rocket	2.89	1.18	2.60	1.23	Success				
15. a dark lake	4.70	1.13	4.71	.98	1. a lonely eminence	4.32	1.49	3.78	1.37
16. a glass of bitter wine	3.51	1.11	3.33	1.19	2. a retreating shadow	3.73	1.33	3.60	1.27
17. a dreamless space	5.04	1.19	4.81	1.19	3. a sun-lit banner	4.98	1.28	5.21	1.14
18. a cracked bell	3.48	.98	3.48	.98	4. a ladder to the sky	4.91	1.28	5.44	1.31
19. a leafless tree	4.77	1.18	4.73	1.00	5. a tinsel goddess	3.93	1.22	3.87	1.02
20. a grinning butcher	2.64	1.38	2.47	1.29	6. a well planned battle	4.65	1.30	4.35	1.11
21. the end of a song	4.00	1.36	4.13	1.18	7. a house of cards	3.87	1.04	3.62	1.02
22. an understanding doctor	3.03	1.22	2.84	1.14	8. a giddy pinnacle	4.11	1.09	3.88	1.07
23. a broken thread	4.26	1.31	4.19	1.18	9. a mirage in the desert	3.72	1.07	3.65	.93
24. an infinite ocean	4.66	1.27	4.63	1.27	10. a seductive woman	3.56	1.34	2.75	1.17
25. a compassionate mother	3.31	1.31	3.06	1.14	11. a triumphant song	5.21	1.08	5.52	1.20
					12. a rainbow	4.51	1.05	5.33	1.16
Love					13. a pair of dice	3.37	1.00	3.46	.97
1. holding jewels in cupped hands	4.13	1.19	4.57	1.16	14. a wasting disease	2.27	1.24	2.25	1.14
2. a snake on a velvet cushion	2.94	1.52	2.72	1.47	15. a greased pig	2.90	1.04	2.99	1.27
3. a churning sea	4.64	1.14	4.52	1.10	16. a delicious elixir	4.15	1.01	4.15	.96
4. a tiger in a cage	3.70	1.22	3.21	1.07	17. a noble ship	4.28	1.21	4.56	1.00
5. a bittersweet drink	4.56	1.30	4.61	1.32	18. a radiant fountain	4.87	1.18	4.94	1.04
6. a pink planet inhabited by two	4.03	1.41	3.93	1.37	19. a vicious addiction	2.60	1.28	2.77	1.07
7. a sorcerer's spell	3.80	1.30	3.82	.89	20. a castle of sand	4.37	1.00	4.22	1.15
8. bubbles in champagne	4.51	1.29	4.98	1.04	21. a golden crown	4.77	1.30	4.67	1.05
9. the melting of winter snows	4.60	1.22	4.52	1.31	22. a den of snakes	2.25	1.21	2.25	1.07
10. dying	2.36	1.26	2.67	1.49	23. a bright jewel	4.38	1.28	4.67	.86
11. a high swan dive	4.00	1.03	4.04	1.12	24. a roulette wheel	3.53	1.07	3.57	.97
12. a dainty box of sweets	3.81	1.16	3.76	1.04	25. a shining sword	4.70	1.38	4.53	1.06

fore, the higher the mean numerically, the more appropriate the image in question in the judgment of the respondents.

It will be seen that most of the means remain fairly close to the middle of the scale, while the standard deviation of all items is fairly substantial, exceeding 1.00 in all but 16 instances. Thus, it is clear that the images elicited quite varying responses in different subjects. It is also to be observed that, in the main, sex differences are not striking.

The next stage of the analysis consisted in establishing the intercorrelation matrix for each of the six scales. Here the data from the female respondents alone were employed since they constituted the largest sample homogeneous with respect to sex. Thereafter the first factor loadings were obtained for each item according to the Hotelling Principle Components method. Further factors were extracted but will not be reported here. The first factor loadings were used to devise a scoring method for each metaphor scale in order to identify the largest single source of variance, and also to insure maximum reliability in scoring.

Table II shows the items yielding significant factor loadings, i.e., .39 or more for each of the six scales. It will be seen that the six first factors show a high degree of logical consistency.

TABLE II—Items Yielding First Factor Loadings Exceeding .35 on Six Metaphor Scales

I. Love			
6	a pink planet inhabited by two	+.67	
19	a stairway to paradise	+.56	
16	violins and golden trumpets	+.55	
12	a dainty box of sweets	+.50	
8	bubbles in champagne	+.46	
15	brave and joyful eyes	+.42	
	vs.		
1	a tarbaby	-.39	
5	a bittersweet drink	-.40	
10	dying	-.41	
2	a snake on a velvet cushion	-.42	
3	a churning sea	-.42	
22	an upraised spear	-.46	
4	a tiger in a cage	-.48	
II. Self Image			
8	a humming teakettle	+.62	
12	a shaft of light	+.54	
14	a splashing fountain	+.45	
3	a bird rising in flight	+.42	
1	a burning candle	+.35	
	vs.		
10	a waterworn pebble	-.38	
9	a beetle in a sandpit	-.49	
24	a withered rose	-.49	
25	a sunken boat	-.49	
23	a trapped moth	-.69	
III. Time			
9	a speeding train	+.58	
25	a galloping horseman	+.55	
21	a fleeing thief	+.54	
7	a fast-moving shuttle	+.49	
2	a whirligig	+.41	
	vs.		
3	a road leading over a hill	-.39	
20	a massive glacier	-.39	
17	drifting clouds	-.55	
10	a quiet motionless ocean	-.64	
19	a vast expanse of sky	-.65	
IV. Death			
1	a satanic wrestler	-.62	
8	a crumbling tower	-.54	
20	a grinning butcher	-.47	
11	a hangman with bloody hands	-.45	
5	a toppled house of cards	-.35	
	vs.		
24	an infinite ocean	+.40	
25	a compassionate mother	+.50	
22	an understanding doctor	+.52	
V. Conscience			
11	an accurate compass	+.64	
24	a secure fortress	+.56	
18	a pillar of a temple	+.53	
20	a treasured book	+.52	
15	a just judge	+.50	
6	a hidden lamp	+.46	
22	a harbour buoy	+.42	
16	a secret map	+.40	
	vs.		
2	a strait-jacket	-.39	
8	a whipping post	-.49	
4	an entailing net	-.53	
21	a threatening father	-.53	
1	a hampering burden	-.55	
VI. Success			
18	a radiant fountain	+.62	
3	a sun-lit banner	+.59	
21	a golden crown	+.58	
25	a shining sword	+.45	
4	a ladder to the sky	+.43	
23	a bright jewel	+.42	
17	a noble ship	+.40	
11	a triumphant song	+.39	
	vs.		
7	a house of cards	-.39	
22	a den of snakes	-.43	
1	a lonely eminence	-.44	
14	a wasting disease	-.45	

Thus, the first factor for Time distinguishes essentially between dynamic directional images as opposed to passive oceanic images, for Death between images involving destructive or sadistic forces vs. those of a comforting and consoling nature. Success is divided sharply into images of a joyous and victorious character as opposed to those of a cynical or ephemeral quality. Images descriptive of Conscience are divided into those emphasizing support and wisdom as opposed to those describing a conscience as ego-alien, tormenting or constricting. Love gives us a clear separation between joyous and agonizing metaphors. Finally, the scale for Self Image yields a first factor distinguishing energetic and ascendant from desurgent and melancholic images.

The final stage of our statistical analysis consisted in the calculation for each individual of a single score for each metaphor scale. This was achieved by subtracting the sum of ratings assigned items with significant negative loadings from the sum of the ratings assigned items with significant positive loadings for each subject. These scores were in turn intercorrelated for all 136 female subjects to yield the following matrix (Table III). It will be seen that the scale for Love correlates significantly with that for Self Image, Conscience, and Success. Time yields only a negative correlation with Death, significant at the 5% level, and a smaller negative correlation with Success. Death yields two correlations significant at the 5% level, namely a negative correlation with Time and a positive correlation

with Conscience. The scale for Conscience yields highly significant positive correlations with both Love and Self Image and a positive correlation at the 5% level with Death. Finally, Success is positively correlated significantly with both Love and Self Image. It will be seen from the above that the most significant intercorrelations establish a cluster relating Self Image, Conscience, Success and Love. Here all intercorrelations save one greatly exceed the 1% level of confidence.

DISCUSSION

Probably the significance of this study lies primarily in setting forth a new device, semi-projective in character, for the evaluation of attitudes dealing with macroscopic aspects of life orientation. It is to be noted, however, that a central complex stands quite clearly revealed associating positive and buoyant self-acceptance with images of a benign conscience, a joyous and victorious success, and a supportive conscience. Most psychologists would agree that this represents a general quality of effective and wholesome life attitude. The converse, namely the association of desurgent self image with punitive conscience, agonized love and cynical images of success would characterize a generally neurotic or disturbed character structure. There does emerge, however, a question which cannot as yet be answered. It may be that the contrast between these four scales rests upon a basic propensity to prefer joyous as opposed to disturbing and distraught poetic images. Still, we would propose, at least tentatively, that there are

TABLE III—Intercorrelations Between First Factor Scores for Six Metaphor Scales

	Self Image	Time	Death	Conscience	Success
Love					
Self Image	+.43				
Time		+.07 00			
Death			+.07 -.19		
Conscience				+.37 +.47 -.03 +.17	
5% level = .17					+.55 +.27 -.15 00 +.13
1% level = .22					

meaningful intercorrelations between attitudes towards these four life parameters.

The remaining two scales, namely those for Time and Death, do not offer cases for extensive and confident interpretation. Still we may note that there is a suggestive connection relating a dynamic sense of time to images of death as a malevolent and sadistic force. This particular complex has had extensive poetical expression, for example, in the sonnets of Shakespeare, in which death as the "grim reaper" is associated with the precipitous flight of time. A further suggestive positive correlation relates supportive images of conscience to comforting images of death.

SUMMARY

The construction of six metaphor scales dealing with time, love, death, success, conscience, and self image is reported. These scales were administered to 136 women and 87 men and the means and standard deviations for each sex were reported for all items. In the main, differences between the

responses of the two sexes were insignificant. A factor analysis was undertaken for each scale to identify the first factor for purposes of scoring. The resulting scores were intercorrelated for the sample of women respondents and showed a highly significant intercorrelation between the scales for love, conscience, self image, and success. The scales for time and death yielded less significant but suggestive relations to each other and to some of the remaining scales.

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Preferences for Styles of Abstract Art and Their Personality Correlates¹

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The experiment reported in this article is one of several dealing with the relation between aesthetic preference and aspects of temperament and motivation (Green & Knapp, 1959; Knapp, 1958, 1959). The principle hypothesis guiding the design of this research has been that aesthetic preference, in company with fantasy, humor, magical practices and religion, constitutes one of the main avenues for evaluating certain central and frequently unconscious commitments of the personality. This proposition derives from the conviction that aesthetic preference constitutes an intimate revelation of the individuality of the subject, is determined largely by affective and frequently unconscious processes, and is relatively free from rational constraint.

In earlier studies of the correlates of aesthetic preference and personality variables the construction and administration of the Knapp Tartan Test was reported (Knapp, 1958). This test, consisting of 30 lithographic reproductions of Scottish tartan designs revealed a number of significant relations with independent personality measures. However, the tartan designs possess some obvious limitations, the most noteworthy being the absence of curvilinear and asymmetrical features. That these properties, particularly the second, are significant dimensions of aesthetic taste, has been demonstrated by Barron & Welsh (1952). Accordingly, in the present study we have sought and employed a variety of stimuli designed to correct the limitations of the Tartan Test, namely Kodachrome reproductions of modern abstract paintings of

acknowledged distinction. These incorporate a substantially wider variety of stimulus variables than do the tartans at the same time that they offer higher level of aesthetic sophistication. But like the tartans, they do not incorporate any manifest representational features and are, therefore, unencumbered by clear object associations.

A feature of the present study apart from its contribution to the analysis of personality differences and aesthetic preference lies in the analysis of schools and varieties of modern abstract painting. As a cultural phenomenon, modern abstract painting is a significant movement in contemporary American culture. As we shall presently see, however, it contains within it a substantial variety of identifiable styles which argue for a greater heterogeneity than is commonly assumed. In any event, one of the significant virtues of employing this type of material lies in the "high seriousness" with which this art may be presented for consideration and appraisal.

METHOD

The construction of the Abstract Art Test was accomplished as follows. Initially approximately 100 Kodachrome reproductions of specimens of abstract art were assembled from a variety of sources.² This group of 100 Kodachrome slides was then carefully reviewed by a panel of five to eliminate all paintings containing any manifest representational features. Thereafter, 80 slides were ranked by 100 students on a seven-point scale. The results of this procedure enabled us to

¹ This study was supported by Grant #M2178 from the National Institute of Mental Health.

² We are indebted to the Museum of Modern Art, Sandak, Inc., the Philadelphia Art Museum, Alfred Maier, and the collection of the Davison Art Center, Wesleyan University.

eliminate paintings which were uniformly favored or disfavored. Final selection of the 40 paintings employed was accomplished by a panel of five who sought to select paintings yielding large variability in judgments and eliminating those of clearly similar pattern. Thus, a test was evolved consisting of 40 Kodachrome slides of approximately equal general popularity, conspicuous stylistic variety, and evident variability in their appeal for different persons. A list of these paintings is given in Table I.

The test as it was finally established was then administered to a group of

120 undergraduate male students. They were given the following instructions:

"You will presently be shown 40 slides of modern abstract paintings. Consider them carefully and note their range, variety, and appeal to you personally. Thereafter we will show them to you again and ask you to rate each painting on a seven-point scale in terms of its artistic appeal to you personally. A ranking of "1" means you like the painting very much, and a ranking of "7" that you dislike it very much. Try to distribute your judgments over all the seven points of the scale. Remember, this is not a test of how well you like abstract art generally, but rather of your relative preference for these paintings."

TABLE I—Means and
Standard Deviations of Preference Rankings for
Paintings Employed in the Abstract Art Test

No.	Artist	Title	Means	S.D.
1	Enrico Donati	Kabara	4.5686	1.8231
2	James Brooks	Jackson (1950)	4.3824	1.6864
3	Babalabella Afro	Pietra (Serena) 1957	4.1176	1.8327
4	Louis Schanker	Circle Image	4.2745	1.8050
5	Enrico Donati	Toledano (1954)	4.5490	1.9535
6	Willem DeKooning	Easter Monday	4.2059	1.6169
7	Piet Mondrian	Square Composition (1922)	4.0196	1.9351
8	Wessily Kandinsky	Geometrical Forms (1928)	3.7617	1.7160
9	James Brooks	Composition	4.5980	1.6992
10	Hans Hoffman	The Wind (1942)	3.6569	1.5243
11	Jean Miro	Thirteenth Ladder Brushes Against the Heavens	4.1176	1.8615
12	Hyde Solomon	Thicket III (1958)	3.7745	1.5587
13	Wessily Kandinsky	Yellow Surroundings	3.5490	1.7857
14	Louis Schanker	Number 12	4.0392	1.5838
15	Piet Mondrian	Composition in red, yellow and blue (1936-43)	3.6765	1.6813
16	Grace Hartigan	Ireland (1958)	3.9706	1.6116
17	Paul Klee	Garden Settlement	4.5686	1.5115
18	Foti Scialoja	Un! Altra Estate	4.1275	1.8400
19	Biala	Untitled (1956)	4.0598	1.7753
20	Hans Hoffman	Untitled (1957)	3.9510	1.8002
21	Jackson Pollock	Autumn Rhythm	3.6765	1.8899
22	John Ferren	Western Landscape	3.9706	1.4104
23	Theodore Stamos	Screen Door	4.5392	1.7188
24	Kyle Morris	Montauk (1957)	4.0196	1.6567
25	Glärner	Relational Painting ± 75 (1955)	4.1569	1.6553
26	Willem DeKooning	Black Friday	4.0980	1.9729
27	Fernand Leger	Composition 1919	3.9118	1.8582
28	Basalabella Afro	L'uccello de mono (1957)	3.5196	1.7418
29	Wessily Kandinsky	Improvisation (1912) Guggenheim	3.8137	1.6132
30	Nicholas Carone	Sound of Blue Light (1957)	4.7843	1.5379
31	Philip Guston	Form 1955	3.6078	1.7386
32	Piet Mondrian	Composition 2 (1920)	4.3529	1.5444
33	Wessily Kandinsky	Composition: Bright Circle (1927)	4.0294	1.9875
34	Hans Hoffman	The Ravine	4.0294	1.7682
35	Jackson Pollock	± 17 (Met)	4.5784	1.6476
36	Hans Hoffman	Spring (Early Trip) (1940)	4.2941	1.6245
37	Mark Tobey	Canticle (1954)	3.9412	1.8140
38	Helion	Red Tensions	3.9706	1.6357
39	Bradley Tomlin	Painting (1953)	4.5882	1.6049
40	Hartung	Composition (1936)	3.5196	1.5129

On the first exposure the slides were shown for approximately 10 seconds each in order to establish a frame of reference. On the second exposure, during which the actual preference ratings were recorded, the paintings were exposed for approximately 20 seconds each.

In addition to a record of the aesthetic preferences for each subject, it was possible to obtain scores on several standard personality tests, namely, the Allport-Vernon, Strong Vocational Inventory and the Minnesota Multiphasic Personality Inventory. For most of our subjects these tests had been administered within the past 18 months, but for some the test scores were as old as three years. In the case of the Strong Vocational Inventory, factorial scores were obtained for the 11 principle factors reported by Strong, while for the MMPI only the 10 clinical scores were employed.

RESULTS

The first step in our statistical analysis consisted of the calculation of the means and standard deviations for each painting as seen in Table I. The means all lie between 3.5 and 4.6 on a seven-point scale, indicating that previous efforts to eliminate conspicuously popular and unpopular paintings had been successful. The standard deviations range from 1.41 to 1.99, again indicating wide variability in the ratings assigned each painting by different subjects.

Next, an intercorrelation matrix between the 40 paintings was computed and then subjected to a principle components factor analysis. Upon examination it was revealed that five factors yielded a particularly satisfactory factorial solution. Table II gives the rotated factor loadings for each painting on the five factors. Only five paintings failed to yield a factor loading of at least .40 on one of the five factors. The first factor, represented by eight pictures (#4, #14, #18, #19, #23, #26, #35 and #40) all with loadings exceeding +.40, is character-

ized by a predominance of the color black (several are achromatic black and white), combined with an impulsive, seemingly uncalculated technique characterized by slashing and in some instances dripping. The second factor is notably represented by five paintings, namely, #7, #15, #25, #32, and #38. These are all paintings of rectilinear design done either by or after the style of the Dutch painter, Mondrian. They are notable for their seeming simplicity and use of black, white and primary color. The third factor yields six paintings with impressive positive loadings, namely, #11, #13, #22, #27, #29, and #33. These are all characterized by a clean, geometrical style, though with rotund and curvilinear features. Colors here tend to be relatively unmodulated, and the structural forms rationalized, though the general design is much more complex than in Factor II. A single painting, #2, gives a significant negative loading on this factor. Factor IV gives highly significant negative loadings on seven paintings, #17, #20, #21, #24, #31, #34, and #37. Here the common characteristic is a sort of diffuse and chaotic design, without clear configurational focus and with an almost total absence of geometric rationalization. Factor V yields significant negative loadings on nine paintings, namely, #1, #2, #3, #5, #6, #9, #18, #19, and #28. These are all characterized by massive configurations without obvious geometric rationalization and embodying an impetuosity of style comparable to Factor I but with a more bold and deliberate effect. A single painting, #8, yields a significant positive loading on this factor. It is characterized by a greenish trans-lucence with a marked absence of bold configuration.

It will be seen that the factor analysis of this material has yielded an unusually striking and coherent structure. Only two factors, namely III and V, show any suggestion of bi-polarity, and in these instances this is represented by a single painting. Moreover,

TABLE II—Factor Loadings for 40 Pictures of the Abstract Art Test on Five Factors

#	Factor I	Factor II	Factor III	Factor IV	Factor V
1	+.178	-.085	-.231	-.066	-.750
2	+.180	-.018	-.417	+.025	-.596
3	+.113	-.079	-.313	-.302	-.562
4	+.629	+.239	-.047	-.048	-.263
5	+.216	-.046	-.083	-.129	-.658
6	+.233	-.133	-.020	-.365	-.500
7	+.149	+.797	-.115	+.043	+.065
8	+.151	-.009	+.101	00	+.577
9	+.152	-.062	-.018	-.269	-.659
10	+.356	-.215	-.077	-.175	-.059
11	-.206	+.153	+.668	+.086	+.237
12	+.275	-.308	+.186	-.018	+.253
13	+.126	+.133	+.650	+.161	+.402
14	+.417	-.078	-.082	-.294	-.234
15	+.009	+.881	+.108	+.043	+.064
16	+.232	+.067	-.055	+.103	+.058
17	+.092	-.130	+.061	-.474	-.337
18	+.437	+.012	-.094	-.053	-.629
19	+.542	-.062	-.176	-.171	-.438
20	-.113	-.085	+.241	-.575	-.082
21	+.243	+.123	-.249	-.590	-.242
22	-.075	-.137	+.409	+.066	-.170
23	+.450	-.113	-.091	+.105	-.169
24	+.108	-.099	-.194	-.600	-.141
25	-.071	+.783	+.198	+.149	+.099
26	+.487	-.083	-.147	-.096	-.471
27	-.159	+.192	+.678	+.166	+.372
28	+.191	+.008	-.259	-.110	-.511
29	+.053	-.007	+.579	-.216	+.247
30	+.112	-.265	-.260	-.224	-.241
31	+.099	-.087	-.223	-.723	-.156
32	-.029	+.753	+.069	+.149	+.002
33	-.061	+.054	+.753	+.095	+.406
34	+.026	-.180	+.362	-.590	-.112
35	+.574	+.100	-.233	-.276	-.255
36	+.218	-.375	+.074	+.282	-.243
37	+.078	-.159	-.220	-.456	+.219
38	+.261	+.502	+.031	+.237	+.019
39	-.053	+.359	-.118	-.258	-.435
40	+.490	+.026	+.143	-.017	-.069

the magnitude of factor loadings is generally quite high, suggesting that these five groupings are particularly incisive. Only one painting yields a significant loading on more than one factor, namely #18. This painting incorporates the strong usage of the color black associated with Factor I with the bold and massive configurations characteristic of Factor V. Its inclusion in both factors is, therefore, entirely congruent with the factorial interpretation.

The next stage of our statistical analysis was devoted to the calculation of a factor score for each subject, representing the sum of his preference

ratings for the paintings characterizing each of our five factors.³ The five factor scores were then correlated with the subjects' performance on the MMPI, the Strong Vocational Inventory (factor scores), and the Allport-Vernon scale. Table III gives the correlations between these test scores and the factor scores for the Abstract Art Test which exceed the 5% level of confidence.

It will be observed that none of these correlations is notably high. However, it should be noted in passing

³ For purposes of simplicity in computation, painting #2 was eliminated from Factor III and painting #8 from Factor V.

TABLE III—Correlations between Allport-Vernon, MMPI, and Strong Vocational Inventory Scores and the Five Factor Scores Derived from the Abstract Art Test

Factor I

Allport-Vernon
 -23 Economic
 +42 Aesthetic
 -17 Political

MMPI

+19 Hysteria
 +36 Masculinity-Femininity
 +20 Paranoia
 +23 Psychasthenia
 +20 Schizophrenia
 +20 Mania

Strong

+27 Artist, physician, psychologist, etc.
 +39 Musician, etc.
 -23 Accountant, purchasing agent, etc.

*Factor II**Strong*

+21 Carpenter, Forest Service man, etc.
 -23 Lawyer, journalist, etc.

*Factor III**Allport-Vernon*

-24 Aesthetic
 +18 Political

MMPI

-19 Hysteria
 -18 Mania

Strong

+18 Carpenter, Forest Service man, etc.
 -24 Musician, etc.
 +28 Accountant, purchasing agent, etc.
 -19 Lawyer, journalist, etc.

*Factor IV**Allport-Vernon*

-26 Economic
 +24 Aesthetic
 -28 Political

Strong

-42 Production manager, etc.
 -28 Musician, etc.
 -32 Accountant, purch. agent, etc.
 +25 Lawyer, journalist, etc.

*Factor V**Allport-Vernon*

-26 Economic
 +32 Aesthetic

MMPI

+19 Masculinity-Femininity

Strong

-21 Production manager, etc.
 -22 Carpenter, Forest Service, etc.
 -31 Musician
 -30 Accountant, purchas. agent, etc.
 +29 Lawyer, journalist, etc.

that they represent minimal relationships for several reasons: (1) the correlations have not been corrected for attenuation; (2) they have not been corrected for coarseness of the rating scale; (3) they are based on test scores which, in some cases, were obtained more than two years earlier; and (4) no attempt was made to normalize the ratings assigned for each subject in rating the 40 paintings. Nevertheless, it should be noted in passing, that a total of 37 correlations out of 135, or 28% attain the 5% level of significance, while 22, or 16%, attain the 1% level of confidence.

It will be seen that Factor I bears a rather striking relation to all three of our personality tests. It yields significant positive correlations with aesthetic interests as measured by the Allport-Vernon, six of the MMPI scales (the rest are positive though not significant), and the Strong factors associated generally with the arts. Its

striking relationship to a general elevation on the MMPI is particularly noteworthy.

Factor II yields very little, indeed, save two correlations on the Strong. Factor III, on the other hand, yields eight significant correlations and stands in rather sharp contrast to Factor I. Here bright colors and rationalized geometric designs are characteristic. It is probably also noteworthy that all correlations with the MMPI scale are negative, though only two reported attain the 5% level of confidence.

Factor IV yields seven significant correlations and, with respect to Allport-Vernon performance, shows a similarity to Factor I and a dissimilarity to Factor III. It does not yield, however, as does Factor I, significant correlations on the MMPI, though there are striking relationships between preference for this group of paintings and vocational interest as

measured by the Strong, generally similar to those reported for Factor I.

Factor V yields nine significant correlations and bears a general similarity to Factor I and Factor IV while it stands in some general contrast to Factor II and Factor III. On the MMPI, however, it yields no general pattern of elevation.

It is probably worth noting in concluding our discussion of results that the five factors identified here are not orthogonal. In reviewing these factors we have noted some general similarities in their correlation with personality tests, suggesting that Factors I, IV, and V should be positively correlated with each other and negatively correlated with Factors II and III. Similarly, Factors II and III should be positively intercorrelated with each other, and negatively intercorrelated with Factors I, IV, and V. This expectation is partially sustained by an examination of the intercorrelations between the factors scores given below in Table IV. Factors I, IV, and V are all positively intercorrelated beyond the 5% level of significance and Factor V yields significant negative correlations with both Factors II and III. However, Factors I and IV do not yield significant negative correlations with Factors II and III, and the intercorrelation between Factors II and III, though positive, is low.

DISCUSSION

The aesthetic as an avenue to personality evaluation has been much neglected for reasons that are not apparent. It is possible that this neglect arises from the special biases of the founder of modern "depth" psychology, Freud, who, though he touched

frequently upon aesthetic matters, never produced a major opus devoted to this subject as he did in the area of dreams, wit and humor, and religion. On several occasions where he is confronted with problems of the aesthetic, for example in his essay on Dostoyevski, he raises the problem only to defer it. Again, in his discussion of Michelangelo's *Moses*, he devoted most of his attention to an intellectualized analysis of the artist's skill in conveying the motives represented in the figure. Finally, he confessed himself peculiarly insusceptible to the charms of music. In short, of the four main avenues to the study of unconscious motivation, he most neglects the arts.

It is not the proper place here to propound a general theory of the aesthetic. That it is intimately tied to profoundly central motivations of the personality can hardly be denied, however. The craving for aesthetic satisfactions and the intense compulsions of certain persons of aesthetic creativity is a widespread and institutionally entrenched tradition in almost all human cultures. Moreover, tradition has assigned to aesthetic taste a touchstone of individuality. It is our conviction that the study of aesthetic preferences offers a most promising mode for the analysis both of individual personalities from a psychological point of view and of cultures from an anthropological point of view.

As we have seen from our factorial analysis, five quite distinctive groupings of painting have emerged with striking incisiveness. All, save possibly one, have shown interesting patterns of correlation with independent personality measures, confirming our expectation that aesthetic preference may prove a fruitful index of personality structure. Beyond these five groupings, there looms a major division between our first, fourth, and fifth factors and the second and third. This general distinction is suggested both by the pattern of intercorrelations between the factors themselves,

TABLE IV—Intercorrelations between the Five Factor Scores of the Abstract Art Test

	II	III	IV	V
I				
II				
III				
IV				

	+.03	+.05	+.19	+.48
		+.17	-.06	-.33
			-.14	-.22
				+.36

and by the manner in which they are related to independent personality measures. The qualities which distinguish these two larger groups appear to be ones of rational control and precision. Paintings characterizing our second and third factors show the clear influence of formal geometry while those saturated on the remaining factors are virtually devoid of any obvious deferment to this principle. The personality correlates of preference for the first style show a characteristic association with extravert vocational interests and an absence of neurotic qualities. The more extreme style of the first, fourth and fifth factors with their repudiation of formal geometry and their chaotic structure tend to be associated with vocational interests and values of an introverted character and with some degree of general neuroticism and character disturbance.

Of course, unanswered here is the question of the significance of preference for traditional representative art as opposed to this newer genre. Such a study is now in progress. Some general speculation might, however, be undertaken concerning the cultural significance of the rise of abstract art as a mode of aesthetic expression in our time. If, as some would hold, the artist is a peculiarly sensitive harbinger of the main drift of cultural evolution, what then is to be said of this development? The answer is surely unclear. But it may be tentatively surmised that the rejection of the object world as the subject of aesthetic cathection marks a deep introverted tendency in which the world of "inner promptings" has replaced the traditional extrovert orientation to the outer environment. If this be so, it may indeed signify a great turning in American civilization, a watershed marking the rejection of traditional American values, finding expression in the "success" ideal, the concern with

science and technology, the exaltation of productive and managerial attainments, and a strong emphasis upon extrovert achievement in favor of a profound cathection of the subjective, the intraversive, and the "world denying".

SUMMARY

After preliminary experiments, a test of aesthetic preference was evolved employing 40 slides of modern abstract art. This test was administered to 120 undergraduate male students who recorded their preferences on a seven-point scale. The ratings were then intercorrelated and factor analyzed yielding five distinctive factors. The first was characterized by the predominant use of black, the second by strict rectilinearity of configuration, the third by rationalized geometric patterns, the fourth by amorphous unrationalized structure, and the fifth by bold chaotic massiveness. Preference for each of these five styles was then correlated with the Minnesota Multiphasic Personality Inventory, the Strong Vocational Inventory and the Allport-Vernon scales. A number of significant relationships emerge indicating that patterns of aesthetic preference for this material is significantly related to established personality measures.

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Affective Expression Among the Aged¹

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Systematic research in personality factors among the aged has largely been centered in the area of cognition. The need to assess intellectual capacities in this group has been reflected in such efforts as Wechsler's standardization of the WAIS (Doppelt and Wallace, 1955). Other studies have focused upon learning, retention, and thinking and have evaluated differences between younger and aged populations with respect to these intellectual dimensions (Birren, 1959).

At the same time, even apart from the important conceptual issues raised, the press for planned rehabilitation and therapeutic programs for the aged make necessary assessment of emotional as well as of intellectual resources of the aged.

The attempt to investigate more complex personality dimensions among the aged has been marked by the employment of clinical methods including some of the projective techniques. These have included Rorschach studies (Ames, Metraux, Learned and Walker, 1954), Figure Drawings (Lorge, Tuckman, and Dunn, 1954) Lakin, 1958), and Ambiguous Figures (Korchin and Basowitz, 1956). While none of these studies focus exclusively or directly upon affective status, the concept is frequently utilized in a manner which suggests its pervasive significance for an understanding of personality among the aged.

The emphasis upon affects as an important variable in understanding the aged is even greater in the clinical studies by psychotherapists. Here, of course, the interactional effects with age becomes a real problem, especially insofar as diagnosis and treatment

for the individual aged person is concerned. The problem is clearly seen in recent reviews of the literature on psychotherapy with the aged (Ross, 1959) (Rechtschaffen, 1959) where two points of view are apparent. One point of view is that limitations of emotional expression among the aged are due to the ego disorganizing and anxiety arousing experiences of physical and social impairment and the proximity of death. The other point of view posits a concept of modification and diminution of affective expression as a function of expected developmental decline. The problem of primary factor thus poses a problem equally difficult to that suggested by presumed interactional effects with respect to emotionality changes in aging. However, especially, in regard to clinical populations either position may denote psychopathologic implications.

Current understanding of emotionality among the aged has derived largely from observation of psychiatric populations. These must be subject to certain limitations. For one thing, the samples are, of course, biased—especially with regard to emotionality. In addition, the service orientation implicit in the therapist-patient relationship and the attendant lack of observer objectivity make it difficult to arrive at valid conclusions regarding modes of affective expression in patient samples, much less normal aged groups.

The focus of the present investigation is on affective expression among normal aged. The methodology derives from the projective techniques tradition where an indirect measure of emotionality, i.e. the perception and response modality is employed. This indirect measure is admittedly limited in terms of the assessment of

¹This investigation was performed with the support of USPH Grants M 900, M 2109, and H 3582.

such variables as emotionality potential, and is clearly dependent upon adequacy of perception and verbalization. Nevertheless, it should be helpful in discovery of the expressive aspects of affect as they may be affected by the aging process.

SUBJECTS

Group I ($N=24$), were young normals and consisted of secretaries and ward attendants. The Mean age for the group was 23.7 years. Group II ($N=55$) was composed of aged "normally adjusted" persons living in the local community who had volunteered to be subjects for the Duke University Geriatrics Project (a longitudinal, multi-disciplinary research program involving over 350 subjects. The Mean age for group II was 73.2 years). Group III ($N=27$) was composed of new outpatients of the Duke University Medical Center's Outpatient Clinic. These persons who had come for examinations on the basis of presumed physical illness were selected on the basis of their availability at a certain time. Their Mean age was 39.6 years. The identifying characteristics of these subject samples are shown in Table I.

Procedures

A set (12) of stick figures devised by Reitman, (1947) was shown to all the subjects of this investigation. These stick figures, because of posture of head and attitudes, body and limbs, suggest emotional states. Description of these figures by subjects is typically in affective terms. The subjects were instructed as follows: "I am going to show you some stick figures. Tell me what sorts of feelings you get from looking at them. Give me as many as you can." Subjects were examined individually. Incidental comments were recorded.

Responses to the stick figures were scored for four parameters as follows: 1. Number of discrete affects used in describing a figure. 2. Intensity of affective expression as rated along a 4-point scale. 3. Comments relating explicitly to the somatic state of the figure as seen by the subject. 4. The attribution of activity to the figure (active, passive, none). Groups of subjects were compared with each other with respect to each of the above-mentioned factors.

Results

Table II lists the mean score for each of the dependent variables ob-

TABLE I—Population Characteristics

Group	N	Mean Age	Sex		Race		
			M	F	Negro	White	Other
Group I Young	24	23.7*	11	13	0	24	0
Group II Aged	55	73.2	25	30	13	42	0
Group III MOPC	28	39.6*	9	19	7	18	1

*Incomplete: Age data for one S unavailable.

TABLE II—Mean Score Obtained by Subject Groups for Each Dependent Variable

Variable Group	Affect	Intensity	Total Somatic Comment	Total Action
Group I Young	13.2	2.0	0.6	9.0
Group II Aged	8.8	1.9	0.8	5.6
Group III MOPC	6.2	3.8	3.0	3.5

tained by the three groups.

For two of the dependent variables, number of affects and action, the performance of the three subject groups was analyzed with the use of a simple random analysis of variance design; in each case the F was significant at beyond the .01 confidence level. In order to investigate the relationship between the scores of the various groups for these numbers further, t tests were performed. Since a Bartlett test of homogeneity of variance had indicated differences between groups with respect to the variables of *Intensity* and *Somatic Comments*, non-parametric techniques were used to test the significance of differences for these variables. These were the Kruskal-Wallis and Mann-Whitney tests. For the first dependent variable (i. e. the number of affects expressed) the three groups all differed from one another (t was $p < .01$). The second variable, intensity of affect, appears to show a statistical difference only between groups II and III (Mann-Whitney U test significant at the .05 level).

For the third variable, while groups I and II do not differ statistically in terms of total Somatic Comment, both differ from group III (Mann-Whitney U test significant at the .01 level). In their expression of action (variable four) all groups differ from one another (in every case t is significant at beyond the .01 level).

Table III shows a matrix listing the t -test and Mann-Whitney results

which will summarize this material.

It may be seen from these results that the following distinctions can be drawn between the performances by the aged group, the somatically ill subjects, and those of the younger normal controls.

In the comparison between the elderly subjects and the medical outpatients, the older persons produced a greater number of affectively toned statements. They showed a higher level of activity (more active and more passive as contrasted with static quality) in their descriptions of figures than did the outpatients. They produced less somatic content in their descriptions than did the outpatients. However, the intensity level of affect in their descriptions of figures was judged to be less than that of the latter.

In the comparison between the aged and the normal groups the findings were as follows: aged subjects were exceeded by younger normals in number of affective descriptions and in the activity levels (active and passive as contrasted with static quality) depicted for the figures. No differences with regard to somatic content and intensity level were found for these two groups.

A qualitative analysis of the affective expressions suggests a descending order for the three groups, young normals, aged and outpatients in terms of such factors as variety, presence of conflicting or alternate responses and in what might be termed "degree of

TABLE III—Matrices Indicating Results of Tests of Significance

Variable A: Affect			Variable B: Intensity		
<i>t</i> -test			Mann-Whitney test		
Groups	II	III	Groups	II	III
I		**	I	n. s.	n. s.
II	**	**	II		*
Variable C: Total Somatic Comment			Variable D: Total Action		
Mann-Whitney test			<i>t</i> -test		
Groups	II	III	Groups	II	III
I		**	I	**	**
II	n. s.	**	II		**

*significant beyond .05

**significant beyond .01

personal involvement" in the expressions.

DISCUSSION

The performance of the elderly subjects relative to the two other groups may illustrate the problem of the differential in affective expression among the aged. The finding of differences along several of the dimensions with respect to chronological age *per se*, in the two non-clinic groups, conforms to the anticipation that the aging process will be associated with a decline in affective "energy," at least insofar as this is reflected in verbal material. A theoretical formulation which would emphasize the normative developmental decline in emotionality among the aged is that of Banham (Banham, 1951). She emphasized the saliency of consolidation, constriction, and disintegration as sequential processes in emotional organization in later life. A limited number of emotional responses and their relative unchangeability are cited as characteristic of normal aged. The point is made that the emotions of older people are characterized by paucity rather than by abundance of affective energy. It is also pointed out—relevant to the mental health vs. psychopathology issue—that there is psychologic economy in this relative constriction. The reduced affective sensitivity and changeability may actually be helpful factors in adjustment.

The views of Cumming *et al* (1959) as elaborated in their theory of disengagement, closely parallel this position, and the results of the present study would seem to lend support to the concept they express as the *appearance of deviance* in old age. (Cumming *et al*, 1959, p. 810), i. e. the disengagement of the aged from life outside themselves. That diminished ability of older individuals to perceive action or affect on the part of others may contribute to the phenomenon of *mutual withdrawal* seems readily apparent. A qualitative ap-

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proach to the material would appear consistent with this interpretation insofar as aged show noticeably less personal involvement with the task than do the younger non-clinic Ss. Preoccupation with bodily ailments and impairments has been widely assumed to affect the emotional responsiveness of the aged and the psychopathologic implications of this preoccupation have been emphasized in the categorization of the emotional traits and characteristics of the aged (Pollack, 1948). Consistent with this assumption would have been a finding of difference between old and young on the dimension of somatic content and similarity of performance between old and sick with regard to this dimension. Our findings do not support this assumption. It would appear that although their physical status is clearly an important area for the aged group (a powerful motivation for participation by normal elderly persons in the Duke University Geriatrics Research Program is the physical examination given each individual) somatic preoccupation has not grossly affected them in terms of their emotional expressiveness. In the cases of the outpatients, their somatic concerns are explicit and are, of course, heightened at the time of their self presentation for diagnosis and treatment. A similar psychological process may underlie the findings of judged greater intensity of affect expression for this group.

Decrement in reactivity potential in emotionality among the aged appears to be an empirical fact (Ames *et al*, 1954) (Banham, 1951). While comparison with a group of somatically ill individuals shows a higher level of reactivity for aged (productivity, variety, activity) and fewer "regressive" features (bodily preoccupation), comparison with young normals seems to reveal the decrement. The issue as to primary etiologic factors is yet to be resolved. To oppose the genetic and sequential constriction hypothesis in a context of general decline there is the

viewpoint of Ross (Ross, 1959) and Gitelson (Gitelson, 1955) who emphasize the psycho-social as well as physical assaults on the aged to which the constricted emotionality is but an understandable response. That sampling and professional bias may complicate the evaluation of either position has been indicated elsewhere in the paper.

The present investigation has focused not upon etiological issues as such but has aimed at exploration of the dimensions of affective expression among the normal aged. Their performances in terms of productivity, activity level, and somatic emphasis by contrast with younger, somatically ill patients and with younger, normal controls accentuate the unique pattern of affect expressions among the aged. The question of etiology with regard to this pattern is complex and there is need for further study to examine the principal hypothesis and to evaluate ameliorative approaches to the problem. It may be that methods such as those used here combined with appropriate physiological and biochemical techniques (e. g. improvement of blood circulation and correction of endocrine imbalance) could be applied to the problem of assessment of changes in affect expressions among the aged. Such an orientation appears to be supported by research which has shown desirable changes in affect expression on the basis of those therapies involving emotional expressiveness.

SUMMARY

Inference about emotionality among the aged is derived almost exclusively from clinical data. It would seem important, therefore, to study affective expressions in normal aged.

In order to examine the range, intensity, and content of affective expression among the aged, the Reitman stick figure projective test was administered to a group of 55 elderly volunteers (Mean age 73.2), and two control groups; one composed of 24 young

normal subjects; (Mean age 23.7), the second comprised of 28 new outpatients in the Duke University Medical clinic (Mean age 39.6). Responses to the twelve card series were examined according to: (a) Number of discrete affects expressed; (b) Intensity of affect; (c) Sum of the Somatic responses; (d) Activity level noted (active, passive, static).

In the comparison between normal elderly subjects and medical outpatient controls, aged subjects obtained significantly better scores in terms of number of affects, activity level and less somatic content. Aged subjects were exceeded by younger controls on the dimensions of number of affects and activity level. No difference was obtained between these groups with respect to somatic content. The revealed unique pattern of affective responsiveness for the aged group was reviewed in the light of the genetic hypothesis of general developmental decline and that which emphasized defects based upon negative (traumatic) emotional experiences associated with aging in our society. Theoretical and practical implications in terms of further research were indicated.

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The Concurrent Validity of the PAT in the Selection of Tabulating Machine Operators

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This study has been designed to test seven hypotheses regarding proficiency in the job of tabulating machine operator.

1. The more accurate and rapid performers, and thus those who are generally more effective, will score higher on a measure of arithmetic reasoning ability.

2. The more accurate and rapid performers, and thus those who are generally more effective, will score higher on a measure of ability to perceive spatial relationships.

3. The more accurate and rapid performers, and thus those who are generally more effective, will have had more experience in the operation of tabulating machines.

4. The more rapid performers, those who apply themselves more to their work, and consequently those who are generally more effective will more frequently be characterized by a high level of work motivation; the less rapid, those who apply themselves less, and the generally less effective by a low level.

5. The more cooperative, the more accurate, but the less rapid performers will more frequently be characterized by strong super-egos.

6. The more effective performers generally and those who excel in each of the aspects studied—cooperation, application, accuracy and speed—will more frequently conform very closely to the social norms; the less cooperative will more frequently reject them and also, other types of authority.

7. The less rapid performers, the less accurate, those who apply themselves less to their work, and consequently those who are generally less effective will more frequently be char-

acterized by marked evidence of psychopathology.

These hypotheses represent a synthesis of ideas derived from several different sources. Unquestionably the most important of these was the author's own experience in operating I.B.M. equipment and in supervising operators working on the Tomkins-Horn Picture Arrangement Test standardization project. In addition, the author has had some experience in selecting machine group supervisors from among experienced operators. Finally, a number of supervisors, personnel specialists, and industrial engineers, all of whom have had rather close contact with office machine operators over a considerable period of time, were consulted.

PROCEDURE

The measures used in testing the first two hypotheses were Test 5, Arithmetic Reasoning, of the Multiple Aptitude Tests and the Survey of Object Visualization respectively. Hypothesis three was investigated through the use of information provided by the subjects on the number of years they had worked with tabulating equipment. The Tomkins-Horn Picture Arrangement Test (PAT) was used in testing hypotheses four through seven. The subjects understood that the testing was being carried out as part of a research project and that the results would not be used to evaluate them as individuals.

The sample included all tabulating machine operators employed by The Atlantic Refining Company at the time the research was carried out. The subjects worked in four different machine groups and operated a number of different types of I.B.M. equipment

including sorters, printers, reproducers, calculators and collators. Of the 41 people, 59 per cent were high school graduates and another 39 per cent had completed at least one year of college, but had not graduated. One individual had not finished high school. Approximately 10 per cent were females. The mean age for the group was 25.9 years and none were over 40.

Intellectually the sample was considerably above the population average presumably as a result of pre-selection at the time of employment. The Company has for many years used some measure of verbal and numerical ability as a guide in hiring. On a 40-item vocabulary test the mean score was 25.8 and the standard deviation 3.7. The approximate percentile equivalent of the mean in the general population is 73. The mean and standard deviation on the MAT Arithmetic Reasoning were 22.4 and 5.2 respectively. The percentile equivalent of the mean using norms reported for 12th grade males is 84. Although the mean score on the Survey of Object Visualization was almost equally high (23.7, percentile equivalent in the employed population 79) the scores were much more heterogeneous (standard deviation 11.5).

The criteria were developed on the basis of paired comparison ratings made by a supervisor in each of the machine groups. These supervisors, all of whom had very frequent opportunity to observe the operators, were asked to compare the people in their group on the following dimensions:

1. *Cooperation*—Which employee demonstrates a greater spirit of cooperation with his fellow workers and supervisor? Which gets along better with people on the job?

2. *Application*—Which employee is stronger in his application to the job? Which shows more interest in the work and strives to do well in it?

3. *Accuracy*—Which employee produces more consistently accurate work? Which do you feel you do not

have to check on as much?

4. *Speed*—Which employee gets his assigned jobs done faster? Which one can produce more in a given time?

5. *Overall effectiveness*—Considering the four factors above, and others not mentioned which are important in tabulating work, which employee would you say is a more effective tabulating machine operator?

Separate forms for each aspect were provided and every employee in each group was compared with every other. Within the group the subjects were then ranked on each of the five dimensions, their position depending on the number of individuals surpassed. In order to obtain some index of the degree to which performance in the four groups might be at a comparable level, the supervisors were subsequently asked to rate each of their operators on a 13 point scale of the type used in assigning academic grades. This scale ran from E (unsatisfactory) to A+ (very outstanding). Grades in the D's were specified as satisfactory, in the C's as very satisfactory, and in the B's as outstanding. The mean grade and standard deviation was then computed for each group. Group comparisons on the five performance variables produced results which were entirely consistent with a chance model.

These findings do not *prove* that the level of performance in all groups was the same. It is possible that differences in standards among the raters may, in spite of the precautions taken, have acted to cancel out real differences in performance. Nevertheless, the results of this second rating do add some credence to the no difference hypothesis. This hypothesis is further supported by the fact that operators in all four groups are under the jurisdiction of the same personnel office. The jobs in the various groups are very similar and intergroup transfers are not uncommon. The total effect of selection and other personnel actions would seem to be one of maintaining a relatively constant level of performance across groups. It seems

safe to conclude that such differences as may have existed were not of sufficient magnitude so that combining the paired comparison ratings, assuming common means and variances, could have introduced a sizeable error. The ranks in each group were converted to C-scale values (Guilford, 1954). All subsequent analyses utilized criterion ratings which were normally distributed. The mean of the distribution was five and the standard deviation two.

It was possible to test the reliability of the paired comparison ratings in only one of the four groups. In the other groups there was only one supervisor whose contact with the men was sufficiently close to permit valid, independent ratings. For this reason the reliability estimates of Table I are based on a sample of 11 cases only. Ratings were made by two supervisors both of whom were in a position to know their people well. The two sets of rankings were averaged to provide the final ratings for this particular group. These reliability estimates appear to be quite satisfactory, except in the case of cooperation. The difficulty in this latter instance may well be a function of the relationship between supervisor and operator. A man who is cooperative with one supervisor need not necessarily be cooperative with another. On the other hand the difficulty may have been in the instructions to the raters. They were asked to compare men in terms of their cooperation with "fellow workers and supervisors". In the case of individuals who cooperate with one and not the other, these directions create a problem. Which type of cooper-

ation should be given primary emphasis? One rater might well choose "fellow workers" and the other "supervisors". The reliability coefficient suffers as a result.

The correlations between ratings presented in Table I also raise some questions. They are high, although perhaps not unusually so. Is a "halo effect" operating to produce a degree of relationship between ratings which is not warranted by the actual performance of the subjects? Or are the ratings an accurate reflection of the true state of affairs? There is no evidence on which to base a conclusion.

In testing hypotheses one through three the procedure was merely one of correlating test scores and years of experience with ratings on accuracy, speed and overall effectiveness. The remaining hypotheses presented certain difficulties, however. The PAT does not yield a score along various dimensions of personality. It produces only the knowledge, when a rare is obtained, that a certain characteristic is in all probability present. Furthermore, there are a number of indexes derived from the PAT, which deal with specific variants of more broadly defined characteristics. The hypotheses as formulated did not specify the exact key rares and verbal responses which should be considered as measures of general characteristics such as strong work motivation and overconformity.

In order to work out more precise definitions in terms of PAT variables for hypotheses four through seven, ten records were selected from the 41 and the subjects' test results (for the PAT only) compared with their perform-

TABLE I. Reliability and Intercorrelations of Performance Ratings

Performance Variables	Performance Variables				Overall Effectiveness
	Reliability	Application	Accuracy	Speed	
Cooperation	.69	.80	.77	.77	.79
Application	.82		.87	.82	.87
Accuracy	.87			.81	.79
Speed	.93				.90
Overall Effectiveness	.81				

ance ratings. After an intensive study of this small sample, a series of positive and negative indicators for each of the criterion variables was devised. The indicators were selected in accordance with the original hypotheses. These more specific hypotheses were then cross-validated against the sample of 31 remaining cases. Biserial correlations were computed.

In setting up the specific indicators both key rares and verbal responses to the PAT were used. The keys which were hypothesized to be positively and negatively associated with the various criteria have been specified below by number only. In all cases when a key number is used it can be presumed to apply to all permutations, "a" through "f". More detailed information on the composition and meaning of these keys is available elsewhere (Tomkins and Miner, 1957; 1959). The verbal material was classified in a manner similar to that described in Miner and Culver (1955). Verbal responses were scored only on plates dealing with a work situation—numbers 1, 3, 4, 5, 6, 7, 9, 13, 15, 16, 17, 18, 20, 21, 25. For any one of the four specific criteria—cooperation, application, accuracy, speed—the verbal categorization could be positive, negative, or no score. A positive finding was indicated by an excess of positive over negative statements amounting to two or more. Similarly, if the number of plates eliciting negative statements exceeded those eliciting positive statements by two or more, a negative score was allotted. If a difference of at least two was not found, no verbal score was given on that particular criterion variable. It was hoped that this procedure would produce a categorization, either positive or negative, only in those cases where a characteristic tendency of rare proportions was actually present. Normative data for PAT verbal responses that would permit definite confirmation of this assumption are unfortunately not available.

In accordance with the general hy-

potheses cooperation was predicted from indicators of overconformity to authority—rares on the high ends of keys 93, 94, 96 and their equivalents among the special conformity keys (scored only when the normative data were sufficient) and a rare on key 123; also from indicators of a very strong super-ego—rares on keys 152, 153, and 235 through 252. Typical positive verbal responses were: "Carrying out orders as directed"; "He remained silent when scolded by the boss"; "One fellow is trying to settle the dispute—Now all is peaceful."

A lack of cooperation was hypothesized from indicators of a tendency to reject authority—scores on the low ends of keys 95, 96 and their equivalents among the special conformity keys, and rares on keys 125, 128, and 151. Typical negative verbal responses were: "The man tries to settle the fight—They end up in a free-for-all"; "The man doesn't like his boss"; "These men may be making fun of a co-worker." On plate 4 a lack of cooperation was scored only when there was a refusal to cooperate with a peacemaker or deliberate instigation of a fight. On plates 13 and 25 a lack of cooperation was indicated only when the aggression described was clearly of a long-standing nature. All three of these plates normally elicit some reference to aggression.

Application was suggested by indexes of strong work motivation—rares on keys 198 and 217 through 220; also by indexes of overconformity—rares on the high ends of keys 93, 94, 96 and their equivalents among the special conformity keys. Key 123 was not included since a low aggressive need, although it may produce more cooperative behavior, does not necessarily affect application. Typical positive verbal responses were: "He is working hard"; "Worker is determined to do better work"; "He is engrossed in his work"; "He arrives at work and gets right on the job." Application was scored only when voluntary behavior was described, not

when the hero responded to obvious external pressure. Also, the behavior involved could not be voluntarily counteracted subsequently within the plate.

A lack of application was assumed to be present when work motivation appeared to be low—rares on keys 223, 224, 226, 231, and 233; also when there was a preoccupation with phantasy or sociophilia at work and consequently reduced concentration on the job—rares on keys 114, 115, 177, 182, 183, and 222. Key 115 was not considered an index of lack of application when key 130 was also rare. When this happens 115 is almost invariably a measure of dependence on authority figures rather than sociophilia per se. Marked evidence of psychopathology was assumed to be present, and thus application lacking when rares were obtained within two of the following groups of keys: 89 through 92, the low ends of 95 and 96, and the equivalents of these six keys among the special conformity measures (deviance): 117 through 121 (sociophobia); 200 (restlessness); 169 and 171 (general unhappiness); 213 (extreme passivity). Typical negative verbal responses were: "He is on the job bodily but his mind is 1000 miles away"; "A lazy individual"; "He decides to quit early." Lack of application is indicated only when voluntary behavior which is not voluntarily counteracted is described.

As specified in the general hypotheses overconformity and strong superego tendencies were the predictors for accuracy. The former was scored as for application; the latter when rares occurred on keys 152, 153, and 235 through 252. Typical positive verbal responses were: "He is congratulated for a good job"; "He studies the machine carefully"; "He is now working efficiently."

Inaccuracy was predicted from marked evidence of psychopathology (see scoring procedure indicated for lack of application) and from evidence of work-distracting tendencies

such as continuing preoccupation with sociophilic wishes (rare on key 114), preoccupation with phantasy (rares on keys 177, 182, 183, and 222), and frequent interruption of work (rare on key 231). Typical negative verbal responses were: "He just ruined the job"; "He was just chewed out for doing a bum job"; "The man is a careless worker."

Speed was presumed to characterize those who gave evidence of strong work motivation—rares on keys 217 through 220; also, of overconformity, scored as for application and accuracy. In addition evidence of phantasy precipitating work (a rare on key 182) was considered as a positive indicator. Typical positive verbal references were: "The man is hurrying to complete the job"; "Finishes work ahead of schedule"; "He was trying to work too fast."

Slowness in work was hypothesized for those lacking work motivation—rares on keys 223, 224, 226, 231, 233, and 234, the last of which suggests some work interest, but a failure in actual performance; also, for those who because of a preoccupation with phantasy or sociophilia at work are unable to concentrate on the job—rares on keys 114, 115 (unless 130 is also rare), 177, 183, and 222. In accordance with the general hypotheses strong superegos were expected to produce less rapid performance—rares on keys 152, 153, and 235 through 252. Finally, marked pathological tendencies, scored as for lack of application and inaccuracy, were expected to reduce the speed of work. Typical negative verbal responses were: "He is coasting"; "Doesn't look as if he does much work"; "He is taking longer on the job than he expected to."

The preceding discussion of the procedure for scoring verbal statements brought out the fact that there were some records which did not permit valid statements as regards certain variables—accuracy, cooperation, etc. In such instances no score was given. Analyses based on the various scoring

keys were sometimes equally unrewarding. In a number of instances the PAT failed completely to yield information that would permit categorization on a given variable. To attempt to classify such cases as positive or negative on the basis of minimal evidence in the verbal material or tangentially related key rares could only have added substantially to the error of prediction. Accordingly, in computing the bi-serial correlations only those cases which could be clearly classified as positive or negative on a particular variable were utilized.

Most of the cases dropped in this manner were eliminated because the PATs produced no indicators, positive or negative. A very few were dropped when *both* types of indicators were present because there was no apparent basis for deciding which to weigh more heavily. In general the procedure, whenever conflicting indicators were present, was to score in accordance with the verbal material, if a clear-cut verbal trend was present. In some instances, however, no score could be given to the verbal statements and there were key rares of a positive *and* negative nature. In such instances an attempt was made to establish the dominant trend by inspecting all plates which permitted arrangement choices in terms of *both* of the two indicators. Were the actual choices on these plates consistently in favor of the positive or the negative indicators? Secondly, the number of plates, included in a key but not met by an individual in achieving his rare, was considered. If the key which was a positive indicator was met on all plates and the key which was a negative indicator was met on only five of eight plates (even though rare) then a positive score was given. It was only in cases where none of these criteria produced evidence of a dominant tendency, positive or negative, that no score was given.

The scoring for overall effectiveness was developed entirely from the scores for cooperation, application, ac-

curacy, and speed. It was assumed that no additional factors contributed sufficiently to the overall ratings so that a sizeable error would be introduced by restricting the analysis to these four factors. If the number of positive categorizations on the four variables exceeded the number of negative categorizations, the man was given a positive score for overall effectiveness. On the other hand if the number of negative scores equalled or exceeded the positive total, the PAT prediction was negative. When no scores could be given on any of the four variables—cooperation, application, accuracy, or speed—then, no score for overall effectiveness was given either.

RESULTS

The findings as regards the first three hypotheses are presented in Table II. The probability values noted in the table are for a two-tailed test. On this basis only one of the nine predictions is supported at an acceptable level of significance. Years of experience operating tabulating equipment is clearly associated with speed. If a more liberal criterion of significance is employed, both experience and arithmetic reasoning skill appear to be related to overall effectiveness. In all probability the correlations with arithmetic reasoning ability would be considerably higher in a more heterogeneous group.

Table III contains the results obtained when the PAT was used to test hypotheses four through seven. These findings were derived from the cross-validation sample of 31 cases. In all cases but one the predictions were supported at very acceptable levels of significance. In so far as the hypotheses dealt with speed of work, the PAT proved ineffective as a predictor. The correlation with ratings on cooperation was somewhat below those for application, accuracy, and overall effectiveness.

In calculating the statistics presented in Table IV the total sample has

TABLE II. Relationship between Various Predictors and Performance Ratings (N=41)

Performance Variables	Predictors				Years Worked on Office Machines	
	Arithmetic Reasoning		Object Visualization		r	p
	r	p	r	p		
Cooperation	.19	>.10	.02	>.10	.11	>.10
Application	.15	>.10	.07	>.10	.17	>.10
Accuracy	.18	>.10	.09	>.10	.15	>.10
Speed	.23	>.10	.08	>.10	.32	<.05
Overall Effectiveness	.28	<.10	.11	>.10	.28	<.10

TABLE III. Relationship between PAT Categorizations and Performance Ratings for Cross Validation Sample (N=31)

Performance Variables	PAT Categorizations			r_{bis}	p
	No Score	Positive	Negative		
Cooperation	5	18	8	.55	<.01
Application	5	12	14	.69	<.01
Accuracy	12	15	4	.71	<.01
Speed	6	11	14	.19	>.10
Overall Effectiveness	2	14	15	.72	<.01

TABLE IV. Relationship between PAT Categorizations and Performance Ratings for Total Sample (N=41)

Performance Variables	PAT Categorizations			r_{bis}	p
	No Score	Positive	Negative		
Cooperation	8	22	11	.58	<.01
Application	7	14	20	.66	<.01
Accuracy	14	19	8	.82	<.01
Speed	8	16	17	.36	<.10
Overall Effectiveness	3	17	21	.76	<.01

been employed. This procedure seems appropriate except in the case of the speed variable. In view of the failure in cross-validation, combining the two samples to compute a coefficient for speed appears questionable. Accordingly, the fact that the statistic presented in Table IV approaches significance should not be taken as evidence of a reliable association between the PAT predictors and speed of work. It is perhaps important to note that in spite of the fact that a number of cases had to be dropped in categorizing on the four specific variables, only three cases had to be eliminated, because no score could be assigned, when it came to computing the correlation for overall effectiveness.

In spite of the failure to predict

speed of work from the PAT, there still remained the possibility that some of the individual hypotheses in this area had been correct. A check of specific cases indicated that hypotheses four and five dealing with work motivation and super-ego strength as related to speed were clearly incorrect. Several new hypotheses regarding these variables were formulated, but none proved valid. Hypothesis seven could not be checked because of the extremely low number of cases exhibiting marked evidence of psychopathology. Hypothesis six, however, did appear to have some validity. As with every other variable studied the overconformists were almost invariably rated high on speed.

Since hypothesis three had also

proved effective in predicting speed of work, it seemed appropriate to introduce a new set of variables to replace the PAT variables that had yielded unsatisfactory results. Overconformity as indicated by rares on the high ends of keys 93, 94, 96, and their equivalents among the special conformity keys was considered a positive indicator and given priority over all other indicators. Years of experience with tabulating equipment was split at the median for the group. Three years or more was a positive indicator; less than three years a negative one. This procedure, of course, did not produce any no score categorizations. A new bi-serial coefficient was computed for speed and the overall effectiveness scoring redone in accordance with the new speed classifications. The results are presented in Table V.

DISCUSSION

Taken as a whole these findings appear to offer rather strong evidence of the PAT's validity. The correlations obtained were consistently above .65 for all variables except speed and cooperation. In the latter instance the slight drop in the correlations appears to be directly attributable to the decrease in reliability of criterion ratings. The PAT scoring tended to emphasize cooperation with an immediate superior. The rating instructions were somewhat ambiguous as to which individual or individuals should be emphasized. As a result predictor and criterion were to some extent measuring different things.

Although speed of work was not

predicted, this failure is probably not attributable to a defect in the measuring instrument. Nearly all of the personality indexes employed were used to predict various other aspects of tabulating machine operator performance with considerable success. A more likely hypothesis is that, with the exception of overconformity which seems to rather consistently produce superior performance in all aspects of the job, personality factors are not a major determinant of speed as a tabulating machine operator. This conclusion is supported by the fact that years of experience is associated with speed but with no other specific aspect of performance. Special skills which develop over time may well contribute to an operator's speed, but not to cooperation, application, and accuracy. In all probability motor factors are involved. It seems logical that motor learning should be a major determinant of the speed with which cards are manipulated, jams are cleared and boards are wired. Unfortunately a clear-cut test of this hypothesis could not be carried out within the confines of the present study.

The very size of the PAT-criterion correlations for application, accuracy and overall effectiveness raises another question. The values obtained were unusually high, especially for a study utilizing a personality measure. It is possible that an investigation based on a larger sample would have yielded lower coefficients. Let us assume for the moment, however, that this is not the case. What other factors might account for the findings? Are there any features of this study which might

TABLE V. Relationship between Effective Predictors (PAT and Experience) and Performance Ratings for Total Sample (N=41)

Performance Variables	Categorizations			<i>r</i> _{bis}	<i>p</i>
	No Score	Positive	Negative		
Cooperation	8	22			
Application	7	14	11	.58	<.01
Accuracy	14	19	20	.66	<.01
Speed	0	23	8	.82	<.01
Overall			18	.53	<.01
Effectiveness	0	20	21	.82	<.01

be expected to result in very high correlations?

One important factor may well be the nature of the job itself. The work is characteristically routine and repetitive. Under such circumstances one would expect personality to be a major determinant of success, provided minimum levels of intellectual ability and dexterity are met. It seems quite possible, in fact, that the present findings may be applicable to many other routine industrial jobs, on the assembly line as well as in the office. Furthermore, the initial selection on numerical and verbal abilities almost guaranteed that an intellectual factor would not prove to be a major determinant of performance level among those accepted for employment. Thus, there was in a sense, more *room* for the operation of personality determinants.

Another factor would seem to be the extent to which complex hypotheses were formulated. The personality variables to be used as predictors were selected after a thorough study of the job and of a small sample of test protocols. The hypotheses were quite specific. Sociophilia at work was a negative indicator; small group sociophilia was not. It was possible, through the selection of certain PAT variables and the rejection of others, to attain a rather high degree of precision in measurement. Thus, error could be reduced and correlations raised.

The particular criterion used may also have contributed to the nature of the results. The paired comparison technique appears to provide an unusually effective criterion when used with relatively small groups. The reliabilities obtained were generally high. It seems important, however, to use as raters only those who have had a real opportunity to observe those rated over a considerable period of time. It became apparent while the present study was being planned that a number of supervisors who might have done the ratings were not really

in a position to judge the effectiveness of their subordinates. Their jobs forced them to spend too much time away from the work group proper. Similarly, the use of too large a group can reduce the probability of obtaining valid results.

Perhaps as important as any of these factors is the nature of the test employed. The scoring system for the PAT was developed in the hope that it would produce validities considerably above those reported for other personality measures. The rationale explicitly states that diagnostic inferences should not be drawn from a record unless the evidence is very strong (a rare has been obtained). Much of the information provided by the subject is ignored as being uninterpretable. Consequently a score cannot be assigned to each subject on each variable the test may potentially measure. In many instances the subject does not respond to the stimuli in a way that would permit a correct inference regarding a certain personality characteristic. To make a statement in these cases introduces a rather high probability of error. This is true of all projective techniques where the subject chooses, usually unconsciously, the areas in which he will provide information. To the extent that a projective technique is used, in the manner of an intelligence measure, to produce a score for all who take the test on all variables, error is almost inevitably introduced. Criterion correlations are invariably lowered by the "guesswork" involved in providing a score on the predictor variable for all subjects, sometimes on the basis of very minimal evidence. The present study was designed specifically to avoid this source of error. When the subject did not provide sufficient information in his PAT responses to permit a diagnostic inference regarding some aspect of his work, no attempt was made to predict regarding that aspect. In all probability this explicit reliance on the implications of the PAT rationale contributed substantially to the size

of the validity coefficients.

SUMMARY

In an attempt to evaluate a number of measures as predictors of proficiency in the operation of tabulating equipment, tests were administered to 41 office machine operators and the results correlated with ratings on various aspects of job performance. A test of arithmetic reasoning ability appeared to have some association with success. The evidence of a positive relationship was somewhat more conclusive in the case of years of experience operating tabulating equipment, but again the correlations were not high. The Tomkins-Horn Picture Arrangement Test yielded a number of coefficients in the range .58 to .82 and proved to be by far the most

effective predictor. Measures indicative of high work motivation, strong super-ego, and overconformity were associated with successful performance. Measures indicative of low work motivation, a tendency to reject the demands of authority, and marked psychopathology were associated with below average performance.

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The Measurement of Ambiguity for Thematic Cards

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Until fairly recent times, the stimulus like the proverbial skeleton was the habitué of the family closet. It was something to be briefly aired as being "standard for all Ss" and then shoved back into the closet, while the clinical psychologist, armed with the Rorschach for deep probing and the TAT intended for shallow but more functional probes, mounted the good steed "response" and attempted to ride the royal road to the unconscious. There were a few prophets, like Zubin (1943) for one, who tried to warn the clinical populace of impending danger, but for the most part they galloped past this Jeremiah, seeking the wonderful mysteries of the "private world."

The early exciting articles by Frank (1939) and Murray (1943), paying scant attention to the stimulus, were reinforced by the findings of the "new look" psychologists which further tarnished the value of the objective properties of stimuli as determiners of perception. Even the perception of such clearly defined objects as coins and swastikas was not held to be independent of the influence of personality. By 1951 Rosenzweig asserted that "The stimulus was dethroned . . . the stimulus is often merely a trigger, sometimes only an 'excuse' for evoking prepared reactions that have already been set in motion by the inner stimulation of an impulse" (1951, p. 218). The recent work of Eron (1950), Birnev (1958), Haber and Alpert (1958), and Reitman and Atkinson (1958) have stressed the importance of the stimulus in the determination of the response. Consequently the problem facing us today is not a defense of the position of stressing the

importance of the stimulus, but rather, a determination of adequate methods of measuring its impact. The specific problem to be dealt with here is the measurement of ambiguity in thematic pictures.

A major thorn has been the confusion due to the multiple connotative usage of the word *ambiguity*. Sometimes, *ambiguity* has been used to describe the physical properties of the cards, as in the "hazy appearance" of some TAT cards (Weisskopf, 1950). At other times the word has been used to designate the number of possible interpretations that might be given to a card (Bijou and Kenny, 1951). It seems desirable to separate the two meanings, designating the first as *structure* and the second as *ambiguity*. *Structure* is defined as "The arrangement and organic union of parts in a body or object" (Funk & Wagnalls, New Standard Dictionary of the English Language, p. 2401). *Ambiguity* is defined by the same dictionary (p. 86) as "The quality of being ambiguous, obscure, or *uncertain in meaning*, especially where either of two interpretations is possible.

Ambiguity is in no way synonymous with lack of structure when we deal with the picture as a whole. This is readily demonstrated by considering Card 10 of the TAT. This card shows two figures, usually described as a male and female, embracing. Due to the lack of fine detail (lack of structure) of the faces, the persons depicted are seen as ranging in age anywhere from teen-agers to mature adults. In telling the stories there is, however, little variation in the descriptions of the behavior of the characters. Nearly all people see them as embracing. If we ask about the *reason for this action* we get a variety of replies. It would

¹ Presented at the APA symposium, 1959, on "The Role of Stimulus Structure in Projective Techniques."

seem then that there are three tasks which confront the *S* in the telling of a TAT story: 1) *Who* are the characters? 2) *What* are they doing? 3) *Why* are they doing it?

The answer to the first question is largely a function of the structure of the card. Accordingly, if the card is highly structured there is little ambiguity as to the identification of the age or sex of the characters. It is still possible, nevertheless, to project beyond the stimulus properties of the cards. One could say, for example, that the male figure is an elderly war veteran. This type of projection, however, is unlikely to occur since it is not specifically required by the usual instructions of the examiner, and would in fact go considerably beyond the stimulus properties of the card. The question *what . . . ?* is still considerably dependent upon the structural properties of the cards, but less so than the *who . . . ?* question. The greater degree of ambiguity, and accordingly projection, occurs because *S* must often go past the description of the physical movements and tensions apparent in the card and give the whole a unifying interpretation which makes the physical actions meaningful. Thus, *S* is likely to perceive the figures in Card 10 as having their arms about each other and give the whole a unifying interpretation by saying that they are embracing.

Lastly, the *why . . . ?* question elicits the most projection because *it calls for an explanation or interpretation which is usually not readily obtained from the physical characteristics of the card*. Presumably then, it is the reply to the *why . . . ?* which tells us most about the individual. It is not meant to imply that the reasons given for the behavior are completely independent of the kind of behavior. Some behaviors have fewer possible motives or causes than others. Apparently, it is more difficult to find multiple explanations for Card 18GF which depicts a woman with her hands around the neck of another person than it is

for Card 10 which shows two figures embracing. The former picture admits of little else than aggression on the part of one of the figures towards the other as an explanation of the structure of the card, while the stimulus properties of the latter picture leave the reason that the two figures are embracing open to conjecture. Explanations may vary in that either happy or sad circumstances may be said to have caused this action.

The value of analyzing the story into three components (*who, what, why*) is that one may now sharply focus on either of the stimulus determinants, *who*, or *what*, according to the desired goal. If, for example, one wishes to know whom *S* perceives as dependent in his family relationship, the actions of the characters depicted may be structured while the ages and/or sex of the figures are disguised. To some degree Card 10 is such a picture, though if one wished he might easily construct a picture better suited for this purpose. On the other hand, the investigator might wish to focus attention on a *particular member* of the family group but leave some uncertainty as to his actions. This might be accomplished by emphasizing the facial features but portraying the character in such a way as to leave many plausible interpretations as to what actions he is engaged in.

Also, one might desire to investigate only the interpretative responses to very highly structured scenes. Accordingly, a picture highly structured with regard to the identity of the characters and their behavior, with only the meaning or reason for their actions being ambiguous would be desired. Card 13MF is an approximation of such a picture. It shows a young, apparently unclothed woman beneath the bedcovers while a young man stands with his arm over his eyes. The chief ambiguity residing in the picture is *why* the characters are in the positions we find them in. The stories told usually admit of several possibilities of which the leading two are "il-

licit sex" and the "illness or death of the wife."

Thus, we have essentially three kinds of ambiguity in a story. One of identification of the characters, the other of a description of their actions, and the third the meaning of their actions. It is incumbent upon the investigator that he specify which of the three he has reference to when he speaks of a picture's ambiguity. Currently, a number of studies have reported that medium-ambiguous cards are most useful in personality description (Bijou & Kenny, 1951; Murstein, 1958a, b; Gurel & Ellmann, 1958). Unfortunately, we do not know whether medium-ambiguity refers to the characters' identity, their physical actions, or the meaning attributed to their behavior. We shall need to know much more about each of these areas before we can speak meaningfully about the ambiguity of a picture.

Assume now that we can specify which type of ambiguity we wish to investigate. We choose to investigate the *why* characteristics of thematic cards, the cards having been so structured for the *who* and *what* properties so that little ambiguity is possible. How can we obtain estimates of the likelihood of one interpretation being given in preference to another?

One cannot simply determine the probability of the motive by having judges rate the strength of the motive by itself, but must rather measure the cue-strength of the motive in comparison to other motives. It will be helpful to use an example at this point.

Suppose we have stories of a group of Ss to three thematic cards categorized according to content and, for the sake of illustration, let us further state that these three cards tap only four motives (aggression, sex, achievement and affiliation) though they do so in differing strengths as indicated in Table I.

Now if we want to know the probability of getting a sexual theme on Card 3 we simply read off the propor-

TABLE I—Proportion of Imagery in Stories Told and Measures of

Ambiguity A and \hat{H} for Each Card²

Motive	Card 1	Card 2	Card 3
Aggression	.96	.25	.50
Sex	.01	.25	.10
Achievement	.01	.25	.20
Affiliation	.01	.25	.20
A	.08	.75	.66
\hat{H}	.26	2.00	1.75

tion of sexual themes appearing for our group for any given card. It may be, however, that we wish to determine the overall ambiguity of each card rather than the probability of obtaining a given motive. A formula suggested by Kenny (1959) is most helpful:

$$A = 1 - \sum p(i)^2$$

where $p(i)$ is the proportion of cases in any i category, and A stands for the ambiguity of the card. Another somewhat more laborious statistic which gives very similar results is \hat{H} , the measure of uncertainty. The formula used is

$$\hat{H} = -\sum p(i) \log_2 p(i)$$

where $p(i)$ has the same meaning as before.

It is apparent that Card 1, strongly cue-centered for the motive of aggression, possesses little ambiguity ($A = .08$), while Card 2 possesses a great deal of ambiguity ($A = .75$). For further information on this method the reader is referred to Kenny (1959).

There are many interesting questions which might be tested through this measure of ambiguity. Some of these are:

1) What is the relationship of A to the meaningfulness of the stories told to the pictures?

2) What is the effect on A of varying only the cues which identify the

² After a table by Kenny, D. T. in "A theoretical and research appraisal of stimulus factors in the TAT." Paper delivered at Yellow Springs Conference on Apperceptive Fantasy Techniques, June, 1959.

main character, leaving the rest of the picture intact?

3) Is *A* more closely related to the physical characteristics of a picture or to the number of possible interpretations which the picture elicits?

The statistic *A* would thus appear to be of considerable use in research with projective techniques. It has drawbacks, however. If we wish information concerning the order of the strength of motives between pictures, *A* is of no value since the order of the categories does not contribute to the value of *A*.

The Kolmogorov-Smirnov test, however, can be used in just such a situation. Assume that a sample of 200 college students have been randomly assigned to judge 1 of 2 thematic cards. Each student is asked to state which of four possible themes (sex, aggression, achievement, affiliation) the card represents. The resulting hypothetical data are shown in Table II. It is apparent both cards have an equal *A* value of .28. The two cards, however, may not be said to have stemmed from populations with the same distribution as indicated by the Kolmogorov-Smirnov probability value of $p < .05$.

There is a problem not yet touched upon. The prior discussion has centered upon differences between motives on a given card and between cards with respect to order of motives. What about differences between persons for a single motive? It is quite possible to differentiate between groups with regard to their use of motives in telling stories to a series of cards even when both *A* and the or-

dering of motives are identical for each card. The *t* test provides this function as reported in a study by Murstein, Coulter, Bowdish, David, Fisher, Furth, & Hansen (1959).

One hundred college undergraduates judged the 31 TAT cards on a five-point scale of hostility ranging from "no hostility" to "very hostile". Cards scaled equally hostile were nevertheless found to vary greatly in their ability to differentiate individuals who perceived a good deal of hostility over all of the cards from those persons perceiving little hostility. Cards 10 and 16 illustrate this point. Card 10 had a mean value of 1.32, while the mean for Card 16 was 1.20. These figures indicate that Ss perceived both cards as quite low on the dimension of hostility. Despite this near equivalence for hostility, the *t* value for Card 16 was .55, while the *t* value for Card 10 was 4.67. The first value is insignificant while the latter is highly significant beyond the .001 level.

The three methods discussed may be applied not only to the determination of overall ambiguity, the measurement of differences in distributions, and the differential assessment of motive strength, but they also may be used in the investigation of the three different kinds of ambiguity discussed earlier (i.e. investigation of the *who*, *what* and *why* characteristics of the TAT cards).

In the investigation of *who* characteristics for example, *A* would represent the variability of choice as to *who* is depicted on the card. The difference in distribution of the choices for *who* was depicted (man, woman, boy, girl) for two different groups would be measured by the Kolmogorov-Smirnov test, and differences between the number one choice as to *who* was depicted might be tested by a *t* test.

Lastly, one might obtain normative group values for the *who*, *what* and *why* characteristics against which the individual's judgments might be compared. Perceptual deviations from these norms may prove to have mean-

TABLE II—The Proportion of Responses of Each Motive to Each Card
(N=100)

	Aggression	Sex	Achievement	Affiliation
Card I	.35	.25	.10	.30
Card II	.30	.10	.35	.25

$A = .28$

Kolmogorov-Smirnov $p < .05$

ingful behavioral correlates. This deviation from the stimulus characteristics of a card as determined by the judgments of the normative group have more claim to be called "projection" than have the usual projective responses. This is so, because as matters currently stand, a response to a thematic card confounds projection and stimulus description. The use of cards whose ambiguity may be objectively ascertained would enable us to subtract the component due to the stimulus properties and leave us with a more meaningful "projective" residual.

CONCLUSIONS

Three methods of measuring ambiguity have been touched upon. These are:

- 1) A measure of overall ambiguity. The measure used here is *A*.
- 2) A comparison between two cards with regard to the *order of motives*. An appropriate statistic here is the Kolmogorov-Smirnov test.
- 3) The determination of differences between single motives. Many statistics can be used in this instance, including X^2 and *t*.

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Personality of Subjects Who Volunteer For Research on a Drug (Mescaline)¹

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Examining the test protocols of a group who volunteered to take mescaline the investigators were impressed with an apparent abundance of deviations from what might have been expected in those of a random selection of the general population. Volunteers for this series of mescaline experimentation were undergraduate or graduate students in medical sciences or related fields. Through announcements made to classes of medical students by a psychiatrist (Dr. Ian Stevenson) describing briefly the major effects of mescaline and the research interest in studying its metabolism and its antidote in action, subjects were solicited.

In an attempt to determine whether those who volunteer for personality study of this sort (involving a drug) actually are different from the general population of medical students, eighteen of the mescaline volunteers, all undergraduate medical students, were matched with a control group for sex and for class (in school, as sophomore, junior, etc.). The controls were students who had been exposed to the same publicity and persuasion as the mescaline subjects, but had not volunteered.

To induce these non-volunteering students to serve as subjects for personality study (without mescaline), one of their confreres, a senior in the school of medicine, used his personal charm and/or promotional technique.²

We feel reasonably certain that no ethical principle in using human subjects for experimentation was violated, such as those suggested by Berg (1954). The non-volunteers for mescaline study seemed at least willing cooperators for the personality study alone, though like most students undergoing special study they undoubtedly experienced misgivings about being scrutinized personally.

In both the experimental (mescaline) group and the control group there were fourteen men and three women.

PROCEDURE

While supplemental tests were given in some cases the essential material for this study utilizes the Rorschach Test, the Thematic Apperception Test and drawings (of a person and of a person of the opposite sex).

RESULTS

The Rorschach test was administered and scored according to the method proposed by Klopfer (1942). Means and medians of main objective scores for each group are presented in Table I together with indices of the significance of differences between them.

Reference to Table I shows that the group who volunteer for mescaline was significantly more productive of Rorschach responses than were the controls; the mescaline volunteers produced more pure form, more color responses, more shading responses (k, K, and FK) and more inanimate movement (m). The mescaline volunteers tend to produce more human movement (M).

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² We wish to express our thanks for this to Dr. Jack Shelton.

TABLE I. Rorschach Measures of Mescaline Volunteers and Control Subjects (N=18, 18)

		Mean		Median		Probability Via	
		Experimental	Control	Experimental	Control	t	χ^2
Number of Responses	(R)	34.2	16.0	24.0	16.5	.01	—
Wholes	(W)	10.1	7.4	9.0	7.5	.02-.05	.10-.20
Popular	(P)	5.4	5.2	6.0	5.0	n.s.	n.s.
Original	(O)	0.3	0.4	0.0	0.0	n.s.	n.s.
Movement							
Human	(M)	3.2	2.1	2.5	2.0	.10-.20	.05-.10
Animal	(FM)	3.8	4.2	4.0	4.0	n.s.	—
Inanimate	(m)	1.4	0.3	1.0	0.0	.02	.01-.02
Third dim.	(k)	0.9	0.1	0.0	0.0	n.s.	n.s.
Diffusion	(K)	0.4	0.1	0.0	0.0	n.s.	n.s.
Vista	(FK)	0.8	0.3	0.0	0.0	n.s.	n.s.
Form	(F)	16.1	5.3	10.0	3.5	.01-.02	—
Form-text.	(Fc)	1.2	1.6	1.0	1.5	n.s.	n.s.
Texture	(c)	0.1	0.2	0.0	0.0	n.s.	n.s.
Black Shading	(C')	1.9	0.8	1.0	0.0	.10-.20	—
Form Color	(FC)	2.2	1.5	1.5	1.0	n.s.	—
Color Form	(CF)	1.3	0.3	1.0	0.0	<.01	—
Color	(C)	0.7	0.1	0.0	0.0	.10-.20	—
Percent							
Animal	(A%)	40.1	50.6	39.0	46.0	.02-.05	—
Form	(F%)	45.1	28.4	45.2	27.3	<.01	.01

As a means of comparing the two groups with an outside criterion of "normality" or "health", the Rorschach performance of each group is presented in Figures 1 and 2 graphically in comparison with Klopfer's proposed profile for a healthy adult of superior mental capacity (Bell, 1948).

When compared with Klopfer's optimal criterion, these profiles show that the mescaline volunteers give greater production of pure form (F) at the sacrifice of movement (human and movement, M, in particular) and of color as Form-color (FC) and Color-form (CF). They give more shading responses and inanimate movement (m) than would be expected of a healthy adult personality.

When (in Figure 2) the control group is compared with Klopfer's optimal criterion the constriction shown by the volunteers through pure F disappears; giving frequent shading responses, the non-volunteers are somewhat short in their use of color. They stand out in the abundance of movement responses, particularly animal movement (FM).

Thus, while the non-volunteers are qualitatively less productive than the volunteers, their fewer productions are singly more expressive and primitive, less refined and tentative and cautious.

By means of the scoring system of Aron (1949), stories told by the subjects in response to the TAT pictures (1, 3BM, 4, 6BM, 7BM, 10, 13MF, 14, 17BM, and 18GF) were evaluated objectively. Apparent needs and press in each story were codified.³

A score was also determined for each subject based on the degree to which he identified with his or her opposite sex; this scoring was borrowed from Groh (1956).

TAT stories were elicited from the experimental (mescaline volunteer) group in writing; those from the control group were elicited orally. Differences between the productions of the groups should be interpreted in the light of this methodological point.

In comparison with the control

³ We wish to express our thanks to Marie Louise Daste for her careful analysis of the TAT protocols.

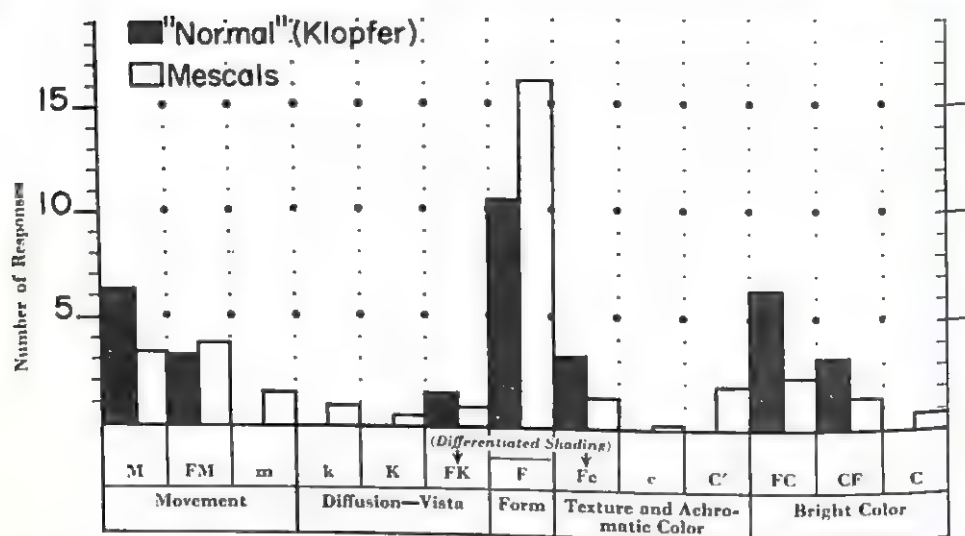


FIGURE 1

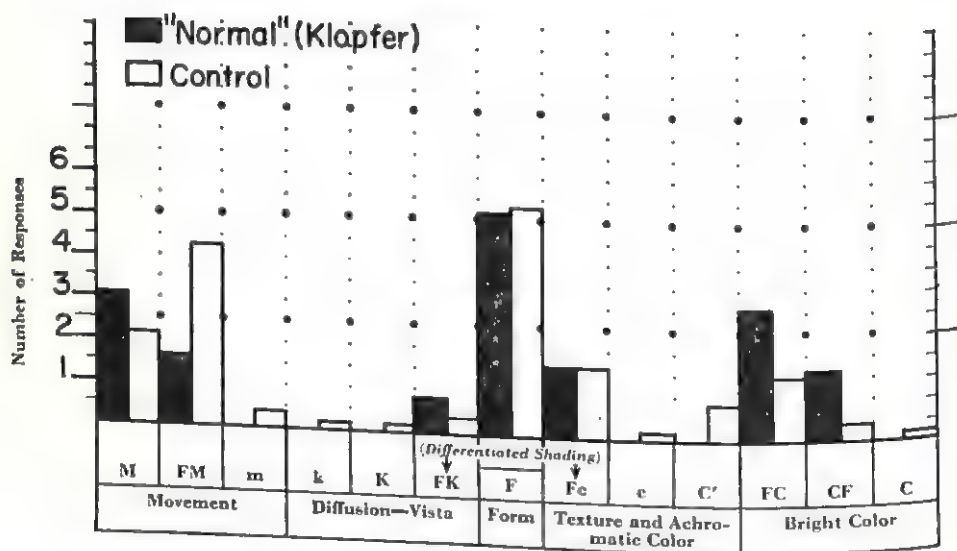


FIGURE 2

group, the experimental group was considerably more productive; its stories were almost twice as long. However, both groups were less productive than groups of college students with whom Murray (1943) did his original work with the TAT. In addition to being more productive than the control group, the experimental subjects projected in their stories more *tension*, and more *senti-*

ence, or expression of the feelings and awarenesses of the characters in their stories. While there was an equal amount of aggression in the stories told by the two groups, the experimental subjects utilized *verbal aggression* (in contrast to the *coercive aggression* characteristic of the control group stories). Mother figures of the experimental group were more aggressive, and father figures more manipu-

latory. The experimental subjects tended more to approve the actions of their characters (particularly male characters).

In contrast to the experimental group, the controls identified less with the characters of their stories; they either described the figures superficially, or they tended to criticize them or reject them for their actions.

Rejecting female figures and particularly for their sexual provocation control subjects portrayed characters who experienced more sadness and dejection. There was greater sensitivity to pressure on the part of parents.

The results of the TAT analysis tend to emphasize similarities rather than the differences between the two groups of student subjects. The most interesting point here may be the overall personality of medical students as a whole rather than the difference between those who do or do not volunteer for mescaline studies.

Both groups seem to be concerned with the same types of things. It is in the degree of interest rather than the kind that they differ. The volunteer for mescaline seems to think, feel and act with more depth and frequency than does the non-volunteer. He is interested basically in the same things and people, but more interested and with greater empathy. The groups were similar in the relatively low ego integration (or masculine identification) score, in showing the importance of equality, of environmental pressure, of aggressiveness in the mother figure who was herself moody and under considerable pressure. Both groups tended equally to approve male characters and to disapprove females, and both, with perhaps the most clarity, were hesitant to let themselves go spontaneously in a testing situation such as the TAT provides.

Figure drawings of the two groups were evaluated by asking three experts to rank or classify the productions on a continuum from "healthy" to "unhealthy." The degree of agreement

between the raters is shown in the following coefficients of correlation:

	B	C
A	.47	.51
B	X	.53

The three ratings were averaged for each subject; a comparison of the two groups for these ratings of their drawings showed the control group to be healthier, but not to a degree of statistical significance.

DISCUSSION AND SUMMARY

In an excellent discussion of the literature regarding volunteers as subjects for psychological and pharmacological experimentation, Lasagna and VonFelsinger (1954) have shown that, by and large, it is the unusual if not the seriously deviant person who is likely to volunteer as a subject for an experiment. One might expect among a group of volunteers a higher incidence of psychopathology than one encounters in the student (or other) population from which the volunteers appear.

While our volunteers for mescaline were found to be more introspective, more empathic and more productive than our non-volunteers, we found they were not less healthy than their non-volunteering classmates. They were less repressive of their anxiety, more given to dealing with it by means of intellectualization and perhaps by facing it to the point of entering personal psychotherapy, or indeed undertaking a professional career in mental health.

The implications of this study for research on drugs or in any area of mental health are simply a supplement to the position urged by Lasagna and VonFelsinger, (namely) that inferences drawn from studies utilizing volunteers must be made with extreme caution. The person whose introspective interests lead him to try a drug for the broader experience he might receive is a person very different from the individual who is

afraid to reveal himself to others or to himself.

An important finding in this study is the demonstration that students (in this instance medical students) whether they volunteer or do not volunteer have in common much immaturity and emotional turmoil, — possibly "normal" for people still embryonic in their professional development, — but sufficiently impressive to raise a question as to the suitability of students of any sort to comprise an experimental population.

Perhaps a student population for study of the effect of a drug is the best available. We do not know whether a population chronologically more "mature" or "settled" or "adjusted" if it could be as readily obtained actually would demonstrate less apparent disturbance and certainly we would expect that the willingness to take a drug such as mes-

caline would be a selective factor.

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A Multiple Choice Rorschach Technique for Increasing Test Productivity In Chronic Schizophrenics

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Frequently chronic psychotic patients produce only a limited number of responses to the Rorschach when it is administered in the standard manner. Marked reduction in associations, blocking, perseveration, and complete rejection of the cards are not uncommon. This paucity of data makes for difficulties in adequate personality evaluation, weakens the validity of interpretations and lessens the significance of the findings. Starer (1956) used the kalcidoscope in a successful attempt to increase the associations produced. However, there are objections which limit this method considerably. The stimuli are not constant; they can not be duplicated, and the more formal aspects of the Rorschach can not be scored.

In order to try to solve this problem it seemed possible that a modified Rorschach approach using a multiple choice technique similar to that utilized by Harrower-Erickson and Steiner (1945) and Singer (1950) might prove effective.

METHOD

Subjects

The subjects for this investigation consisted of 50 chronic psychiatric patients with the primary diagnosis of schizophrenia, chronic state. All of the patients had been hospitalized for a minimum of three years. The mean age for the group was 36.42 with a standard deviation of 8.25. The mean educational level for the group was 10.18 years of schooling with a standard deviation of 2.66. Only those patients, selected in random order, who produced 11 or fewer responses

on the Rorschach, administered at the time of investigation, constituted the population for this study. The average number of associations produced on the Rorschach, administered by means of standard procedures, was 4.5 with a range of 0 to 11.

Technique

Three tests were designed by the authors to explore areas which were meaningful to them for personality assessment. Other tests can easily be created to serve the special interests of the examiner.

The first consisted of ten photographs² placed on 2" by 3" cards, using the blot areas demarcated by Harrower-Erickson (1954) from the standard Rorschach test. All photographs were achromatic. The areas utilized in the first test constitute Rorschach Card I, D1; Card II, D3; Card III, D5; Card IV, D2; Card V, D2; Card VI, D3; Card VII, D1; Card VIII, D2; Card IX, D6; and Card X, D1.

Each patient, tested individually, was presented with four possible responses, listed in random order, for each of the areas and was asked to make a choice of the one best fitting the presented stimulus. Of the four choices presented only one has acceptable form level using the scoring procedure of Beck (1950). The remaining three responses were of F minus quality. A form level score could thus be obtained by adding up the number of F plus responses, the maximum score being ten.

The second test constituted stimuli

²The authors are indebted to Theodore Willers, Chief, Medical Illustration Service, Veterans Administration Hospital, Northport, New York, for taking the needed stimuli photographs.

¹A copy of the multiple choice tests used in this study may be obtained without charge from Emanuel Starer, Ph.D., Veterans Administration Hospital, Northport, New York.

from the following areas of the Rorschach, with each stimulus again being achromatic. These were Rorschach Card I, D2; Card II, D2; Card III, D8; Card IV, D6; Card V, D2; Card VI, D1; Card VII, D3; Card VIII, D6; Card IX, D2; and Card X, D9. Four choices in random order were presented for each of the stimulus cards and the patients, tested individually, were asked to select which one best fit the cards. This test was designed to evaluate sex identification. Each of the four choices consisted of one male association, one female association, and two animal associations. An indication of male sex identification was obtained by adding up the number of male associations chosen with the maximum score being ten.

The third test consisted of photographs, placed on 2" by 3" cards, of the usual Rorschach series of ten cards, with the whole card being utilized. All were achromatic. The patient, tested individually, was given four choices for each card. All of the choices were of acceptable form level using Beck's scoring system. One of the choices was extrapunitive in nature, another was intrapunitive in nature, another was involved with competitiveness and high level of aspiration, and the final choice involved a sex association. Each patient was asked to pick one of the four associations, presented in random order, which best fit the card. The scoring consisted of adding up the total number of associations in each of these categories, the maximum score in any category being ten.

RESULTS

On the first test each of the 50 patients was able to respond and make a choice. This was independent of whether the patient produced no responses, or as many as 11, on the Rorschach. The form level score for the entire group was 5.78 out of a possible maximum of ten, with a standard deviation of 1.83. Using this technique it was possible to determine the relative

form level for each patient, whereas this was impossible with the Rorschach administered in the standard manner, for almost all of the patients.

On the second test, purporting to get a measure of male sex identification, 45 of the 50 patients were able to make sufficient choices to enable a score to be obtained. The average number of male associations for the total group was 1.71 out of a possible maximum of ten. The average number of female associations produced was 1.13. The remaining choices were made from animal associations.

On the third test which involved making a choice in one of the following categories, extrapunitive, intrapunitive, competitiveness, and sex, 44 of the 50 patients, tested individually, were able to respond sufficiently for a score to be obtained. The average number of associations for the total group in each of the categories was: extrapunitive, 2.07; intrapunitive, 1.25; competitiveness, 4.82; and sex, 1.86, out of a possible maximum of ten for each of the categories. It is readily seen that the number of associations produced by this group was highest in the competitiveness category and lowest in the intrapunitive category. Using the chi-square method it was determined that the result for the competitive category significantly exceeded chance expectation ($P < .01$).

DISCUSSION

The results of the tests, using the modified Rorschach technique with a multiple choice arrangement, indicate that this approach appears to be effective with chronic psychiatric patients who produce only a minimal number of associations to the Rorschach administered in the standard manner.

On the first test it was possible to obtain a form level score for each of the 50 patients, irrespective of the number of associations produced on the standard Rorschach. This gives more positive evidence of the form level of perception, and does not re-

quire the drawing of inferences from omissions as is usually done in the Rorschach analysis when the number of associations is sparse. It also provides a more effective and quicker evaluation of the basic assets still present in many chronic patients. An inspection of the results indicates that the form level of the tested group is higher than would be thought likely from the original associations to the standard Rorschach. The knowledge of more than expected ego strength and reality contact, and the possibility of some resources in the nature of logical intellectual powers influence the therapist and affect the prognostic evaluation.

The results of the second test are especially noteworthy for the suggested difficulty in human identification. The weakened sense of self and the withdrawal from the environment are possible implications. Whether this is related to chronicity in schizophrenic patients remains to be determined. It is interesting to note that the identification is higher with the male figure than with the female figure but there is a tendency to identify more rapidly on a sub-human level. The question may be raised as to whether the usual identification process was stopped at an early age. It is well known from observations of children's play activities that they tend to identify at certain stages more readily with animals than with human beings. The important result of this test was that an identification score could be obtained for 90 per cent of the group irrespective of the number of associations produced on the standard Rorschach.

On the third test dealing with the categories of extrapunitive, intrapunitive, competitiveness, and sex, it is noted that 88 per cent of the group was able to respond sufficiently to obtain a score. The result obtained for this chronic group raises provocative speculation. Whether the significantly higher score in the area of competitiveness stems from an artifact

depending upon the "stimulus value" of the card or from underlying dynamics of this group remains to be explored. Does the minimal number of associations on the standard Rorschach stem from strong fears of failure in a competitive situation? Are they therefore not putting forth any real effort or making an apparent attempt to cooperate? Has the failure in the past in competitive situations been excessively traumatic for this particular group? Are the competitive choices in this multiple choice test less threatening than the alternative responses? The answers to these questions remain to be determined.

The impetus for this study was provided by the difficulties encountered in testing chronic psychotics. However, the problem of minimal productivity is not uncommon with other groups and it is suggested that this technique can be extended for use with other psychiatric categories.

SUMMARY

The Rorschach was administered individually in a standard manner to each of 50 chronic psychiatric patients. This group produced 11 or fewer associations with the average being 4.5 responses. Each patient was then given a modification of the Rorschach using a multiple choice technique and was asked to pick one of four responses best fitting the specific stimulus card. Three tests were designed to yield scores in form level, sex identification, and choice in one of the following categories: extrapunitive, intrapunitive, competitiveness, and sex. All of the patients were able to respond sufficiently to score form level. Ninety per cent of the patients were able to respond to the sex identification test. Eighty-eight per cent of the patients were able to respond to the selected categories test. The results indicate that this modified Rorschach procedure was highly effective with a group of chronic schizophrenics in increasing the production of responses and in

providing more data for improved personality evaluation. It is suggested that this technique can be a useful device with similar individuals who respond minimally to the standard Rorschach.

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The "Meaning" of the Bender-Gestalt Test Designs: A Study in the Use of the Semantic Differential¹

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Although the Bender-Gestalt Test is commonly used as a maturational test of visual Gestalt functions in children and as a method for exploring retardation and loss of function due to organic brain disorders in children and adults, it is also frequently employed by clinicians as a projective device to elucidate personality dynamics. The extension of this technique to the personality sphere has led, on the one hand, to several attempts to quantify performance on the test (Billingslea, 1948; Pascal & Suttell, 1951) and, on the other hand, to a number of studies which are designed to shed light on the nature of the perceptions, affective associations, or meanings attributed to the figures by Ss.

The latter approach is exemplified by the work of Sucek and Klopfer (1952) who obtained free associations in response to the Bender designs from a group of normal Ss. On the basis of their results the authors developed interpretative hypotheses concerning the stimulus meaning of each of the Bender figures. The basic stimulus properties of the test material were also investigated by Tolor (1957) who studied the formal or structural characteristics of the Bender associations produced by a group of neuropsychiatric patients.

When the focus of attention is not on the general properties of the Gestalt figures themselves but on the meaning of the designs to individuals taking the test, Hutt (1945) suggests that the administration of the test be modified so that Ss comment on each of the figures following comple-

tion of the reproductions or that Ss modify their drawings to make them "nicer." Greenbaum (1955) has expanded on the associational technique by inserting the patient's Bender associations into the Rapaport-Gill-Schafer word association list, and, whenever the new associations still fail to clarify the meaning of a given concept, introducing the latter response in a series of new stimulus words.

All of these efforts basically are intended to clarify the specific meaning of obtained deviations in the drawing of the Bender designs. It is assumed that in order to understand the patient's Bender test behavior it is necessary first to comprehend the meaning of the symbols to which he is responding. Recently a new method for the study of the meaning of stimuli, such as the Bender-Gestalt figures, has become available to researchers; namely the *semantic differential* (Osgood, Suci, & Tannenbaum, 1957). This method is essentially a combination of controlled association and scaling procedures used to differentiate the meanings of concepts. It has already been applied to such stimuli as Rorschach cards (Rabin, 1959) and Thematic Apperception Test pictures (Reeves, 1954) but never, to the author's knowledge, to the Bender designs. It is the purpose of this study to determine the connotative meaning of the Bender figures so that the clinician's projective use of the test may be related to empirically based information rather than to unverified hunches or vague intuitions.

PROCEDURE

The procedure utilized in this investigation closely parallels that employed by Rabin (1959) in a recent

¹ An abbreviated version of this paper was printed at the 1960 Annual Convention of the American Psychological Association in Chicago, Illinois.

study of the meaning of the Rorschach cards. As has been done in the Rabin study, 20 scales of the semantic differential were selected by the E as indicated in Table I. In the semantic differential the given concept to be differentiated appears along with a set of bipolar adjectival scales. The scales have seven spaces between the poles permitting the S to express both direction and intensity of each judgment. An example of such a scale is the following:

Beautiful—:—:—:—:—:—:—:
—:—:—:—:—:—:—:—:—:Ugly

The 20-scale form of the semantic differential which was used included scales representative of the three major factors which have been consistently obtained with different samples of Ss and a variety of concepts. The *Evaluative Factor* shows high loading on Items 1, 3, 5, 6, 7, 8, 9, 10, 13 and 16; the *Potency Factor* is represented by Items 2, 4, 12, 15, 18, and 20; and the *Activity Factor* is prominently found in Items 11, 14, 17, and 19.

In administering the semantic differential on a group basis the E used the same instructions given by Osgood et al (1957). The Ss were 68 college students in two undergraduate general psychology classes at the University of Bridgeport. There were 41 males and 27 females included, ranging in age from 17 to 38 years, the median being 19 years. Each Bender design was exposed for three minutes during which the Ss were given an opportunity to make their ratings. The three-minute exposure time had been found to be satisfactory by Rabin (1959) in the previous experiment. The data consist of 180 choices (20 scales x 9 Bender designs) made by each of 68 Ss.

TREATMENT OF DATA

The Ss' responses to the semantic differential yield information pertinent to both direction and intensity of each judgment. However, since interest in this preliminary study was primarily in the dimension of direction

of meaning, it was decided to dichotomize the choices on each scale, placing responses falling in positions 1 to 3 in one category and placing responses falling in spaces 5 to 7 in the other. Ratings at the mid-point, i.e., check marks in the fourth space, were equally and randomly divided between the two classifications. In those few instances in which a S failed to respond to an isolated scale, he was assigned a value equivalent to the mid-point of the continuum.

Chi square tests were done to determine the differences between the incidence with which each side of the scale was selected for each of the nine Bender designs. These analyses were done for the male and female Ss separately and for the combined sample as a whole. As there are 20 scales and 9 designs, there were 180 chi square computations for each of the three sets of data making a total of 540 such computations.²

RESULTS

Table I contains information relative to the significance of the differences in the number of Ss rating each polar end of the scales for each of the Bender designs. Of the 180 chi square tests computed for the total sample, 79 are significant at the .05 level or beyond. The corresponding figures for the male and female sub-groups are 57 and 54, respectively.

Based on the data presented in Table I and considering only the dimension of direction, the Bender designs may be characterized as follows:

Design A: clean, pleasant, clear, honest, small, worthless, peaceful, light, cold, thin, smooth, and delicate.

Design 1: clean, small, distasteful, worthless, peaceful, light, cold, thin, smooth, and delicate.

Design 2: good, beautiful, strong, clean, pleasant, clear, active, fast, small, and smooth.

Design 3: good, beautiful, strong,

² The author wishes to extend his appreciation to Sheldon Feldman who assisted in the statistical analyses of the data.

TABLE I. Significant Differences in the Frequency With Which Subjects Rate the Polar Ends on the Semantic Differential for the Nine Bender Designs

	A	1	2	3	4	5	6	7	8		A	1	2	3	4	5	6	7	8
1. good			****	****					****	bad									
2. large							***			small	****	****	****				**		
3. beautiful			**	****			***		****	ugly					***		****		
4. strong			*	*			*		****	weak									
5. clean	****	****	****	****		*		***	****	dirty									
6. tasty								***	****	distasteful		*			*		**		
7. valuable									***	worthless	*	****							
8. kind									***	cruel					**		****		
9. pleasant	*		****	****					****	unpleasant					*		**		
10. happy										sad									
11. ferocious							***			peaceful	*	***							
12. heavy										light	****	****		*					**
13. clear	****		****	****	*	*	**	***	****	hazy									
14. hot								***	****	cold	*	*							
15. thick										thin	****	****							
16. honest	*									dishonest					*				
17. active			**	****		*	****			passive				**					
18. rough							**			smooth	****	***	**	***					
19. fast			***	****			**			slow									***
20. rugged							*			delicate	**	****							

*Significant at the .05 level

**Significant at the .01 level

***Significant at the .005 level

****Significant at the .001 level or beyond

clean, pleasant, clear, active, fast, light, and smooth.

Design 4: large, clear, ugly, distasteful, cruel, unpleasant, thin, and dishonest.

Design 5: clean, clear, and active.

Design 6: large, strong, ferocious, clear, active, rough, fast, rugged, bad, ugly, distasteful, cruel, and unpleasant.

Design 7: strong, clean, and clear.

Design 8: good, beautiful, strong, clean, tasty, valuable, pleasant, clear, peaceful, and smooth.

Factor Scores:

Another view of the meaning of the Bender designs can be obtained by noting the relationship between the three main factors and the evaluations made of each of the Bender designs. Arbitrarily, the midpoint on each scale was assigned a score of 0 and the other positions were scored from -3 to +3. The scales comprising a given factor were then selected for each Bender figure and an average factor score was computed. The resulting average factor scores, reflecting both direction and intensity of choices, are presented for the nine Bender designs in Table II. It should be observed that plus values represent the direction in which a more favorable evaluation, a greater potency, and a higher level of activity has been attributed to the stimuli; the minus values represent the opposite.

TABLE II. Factor Scores for the Nine Bender Designs

Factors ^a	Designs								
	A	1	2	3	4	5	6	7	8
I Evaluate	+ .36	-.03	+ .50	+.64	-.20	+.17	-.42	+.23	+.80
II Potency	-1.09	-1.77	-.28	-.32	+.02	-.06	+.54	+.22	+.09
III Activity	-.60	-.34	+.14	+.58	-.10	-.04	+.54	+.04	-.12

^a A plus sign represents a more favorable evaluation, a greater potency, or a higher activity level than a minus sign.

TABLE III. Number of Significant Differences in Rating Each Bender Figure for Male, Female and Combined Sample

Groups		Designs								Total
		A	1	2	3	4	5	6	7	8
Males	(N=41)	9	9	6	8	3	1	8	3	10
Females	(N=27)	8	9	8	8	6	1	4	2	8
Combined	(N=68)	12	10	10	10	8	3	13	3	10

Design and Sex Differences

Table III reveals that there are marked differences with which the various Bender figures lend themselves to categorization on the scales of the semantic differential. For example, on only three of the scales do Ss show agreement with respect to directionality when they rate Designs 5 and 7. This stands in sharp contrast to Designs 6 and A on which there is agreement as to directionality on 13 and 12 scales, respectively.

The total number of significant chi square values obtained by male, female and combined samples is also presented in Table III. It will be noted that there is a high level of agreement between male and female Ss in the categorizations of the figures. The combined sample in each instance produces a greater number of significant differences, as would be expected on the basis of the larger number of cases in this group. In no instance in which a scale yielded a significant difference for both male and female Ss did the directionality vary for the two sexes. Moreover, in every case, except for one scale on Design 4, when the selections of one sex are significant, then the other sex ratings are in the same direction, although not always to a significant extent. It would seem, therefore, that there was very close agreement by members of both sexes in their evalu-

ations of the Bender designs.

DISCUSSION

It is evident that these results of the meaning of the Bender designs are limited not only by the nature of the sample of normal college students used, but also by the selection of specific scales on the semantic differential. The question as to the adequacy of these scales in delineating the meaning of Bender figures can only be partially answered. The fact that there are some significant differences in the polar selections on every scale except one (happy-sad) certainly suggests that the Bender figures can be evaluated reliably through the use of these particular scales. However, we do not know whether more relevant scales could not have been developed, perhaps contributing to our understanding of the meanings of the Bender designs.

The present findings do indicate that similar to other projective stimuli, such as the Rorschach cards (Rabin, 1959), the Bender materials also evoke symbolic reactions having a considerable communality in meaning for groups of individuals. Despite the fact that on some designs the group consensus is not very high, the mean number of scales on which there is accord for all figures is 8.8, indicating a substantial degree of agreement. This is not to negate the importance of evaluating individual differences in responses, but to focus attention on the area of agreement by Ss.

It is noteworthy that the connotative meanings of the nine designs differ appreciably, with no two patterns of adjectival descriptions being alike. The differences in intensity and direction of the factor scores provide a similar picture of uniqueness in the meaning of the designs.

An attempt could be made to relate the interpretative hypotheses cited by Sucek et al. (1952) for each Bender figure to the present findings concerning the meaning of the designs.

For example, Design 6, the drawing of which allegedly reflects "attitude toward and characteristic way of handling of (his) primitive instinctual drives or their derivatives," is found to be low on the Evaluative Factor, high on the Potency Factor, and high on the Activity Factor, as might be expected. In addition, it is interesting to note that this design is also characterized as large, strong, ferocious, rough, rugged, bad, ugly, distasteful, cruel, and unpleasant. Incidentally, the description "bad" occurs for no other design to a significant extent. Design 1, which, according to Sucek et al. (1952), reflects "attitude and feeling about regularity, systematization and importance of detail," is found to be low in Potency and low in Activity, again as might be expected. As can be seen, some of the results of the present study are consistent with the results derived from the associational method. However, other results and interpretations can less easily be reconciled with one another. To illustrate, Design 4, which was considered ugly, distasteful, cruel, unpleasant, thin, and dishonest, is regarded by Sucek et al. (1952) to be reflective of the characteristic attitude to incongruities and ambivalences in the person and his emotional life. The logical connection between this interpretative hypothesis and the connotative meanings is not readily apparent.

Another approach might be the determination of the relationship between difficulty level of each Bender design, as ascertained by means of the relative ease of recall, and the specific meanings assigned to the figures. For example, Tolor (1956; 1958) noted that Design 8 is most frequently recalled by different groups of Ss. Interestingly, this design is also high on the Evaluative Factor. However, the absence of any consistent relationship is evident in the fact that among Designs 4, 3, and A, which have been found to be the three most difficult designs for recall, two are high on the Evaluative Factor and one is only

somewhat low on this factor.

SUMMARY

In an attempt to contribute to the understanding of deviations in the drawing of Bender figures, the meaning of each of the Bender designs was studied using the semantic differential as a tool. Twenty scales of the semantic differential were administered to 68 undergraduate college students in evaluating the Bender configurations. The Ss' responses on each seven-point scale were dichotomized and chi square tests were computed to determine the differences between the incidence with which each polar end of the scale was selected.

Of the 180 chi square values for the total sample, 79 were significant at the .05 level or beyond. In the male sample, there were 57, and in the female group, 54 significant values. There were no sex differences as related to the meanings attributed to the designs. However, there were marked differences with which the various Bender stimuli lent themselves to categorization. The direction and intensity of assigned meanings was also determined by an analysis of the Evaluative, Potency, and Activity factors as represented by the scales.

The discussion revolved around the adequacy of the scales used, the unique patterns of meanings attributed by groups of individuals to the different designs, and the relationship between previous interpretative hypotheses of the Bender figures and present findings. It was also concluded

that there is no consistent association between the difficulty level of the Bender figures, as determined by the facility with which each is recalled, and the connotative meanings assigned to them.

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Stimulus Characteristics of Rorschach Inkblots as Perceived by a Schizophrenic Sample

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In his review of the role of the stimulus in Rorschach responding, Baughman (1958) commented on the paucity of empirical studies related to the symbolic meaning of the inkblots. He saw the overcoming of methodological obstacles to carefully controlled studies of the connotative meaning of the blots as a "formidable challenge."

Since this review several people (Little, 1959; Rabin, 1959; Zax and Loisel, 1960; Zax and Loisel, in press) have employed the use of Semantic Differential scales (Osgood, Suci and Tannenbaum, 1957) as a means of providing data regarding the properties of the inkblots. These investigations have, in some instances, lent empirical weight to what was already intuited, and in other cases brought to light unsuspected attributes (i.e. the highly negative valence of Card I, the tendency to regard Card VII more positively because of its position in the series). The population sampled in these studies, however, has been of a single type, that is, college students. In at least two of these studies (Rabin, 1959; Zax and Loisel, 1960) it was suggested that a systematic sampling of groups at varying educational levels as well as clinical groups might be profitable.

In line with these suggestions, the purpose of the present study is to investigate the reported stimulus characteristics of the Rorschach inkblots as perceived by a group of patients clinically diagnosed as suffering from

schizophrenia. Their reactions as measured by the Semantic Differential will be compared to those of a matched group of hospitalized non-psychiatric patients as well as to those of a younger group of college students.

METHOD

Ss for this study were: (1) a group of 40 veterans seen during their first hospitalization for a neuropsychiatric disorder and clinically diagnosed as schizophrenic; and (2) a group of 40 veterans hospitalized for medical purposes who were tested at a time when they presumably were not being exposed to great stress (i.e. in a recuperative phase after surgery or after having suffered a bone fracture, etc.). These groups were matched for age and education. For the schizophrenic group (henceforth referred to as Group S) the mean age was 30.60 years with a range from 22 to 38 and the mean education level was 12.98 years ranging from 10 to 20. The mean age of the medical patients was 31.02 with a range from 25 to 36 and their mean education was 12.68 years with a range from 10 to 19. When tested the schizophrenic Ss had been hospitalized for an average of 119 days while the medical patients had a mean hospitalization of 46 days.

On the basis of factor loadings and judged relevance to the inkblots, seven scales from each of the three Semantic Differential factors were used. They are listed in Table I. The scales were randomly arranged in 10 different orders, and booklets were assembled in such a way that the 10 orders fell in random positions providing a control for any order effects which might operate in the making of successive ratings.

The authors are grateful to the staff of the Veterans Administration Hospital, Buffalo, New York, particularly Dr. M. G. Staiman, Chief Psychologist, for their cooperation and assistance with data collection. A debt of gratitude is also owed the patients of that hospital who served as subjects.

Ss were given these booklets which contained the standard Semantic Differential instructions (Osgood, et al., 1957) with only minor modifications to account for the fact that inkblots rather than verbal concepts were being rated. After reading the instructions, Ss were given an opportunity to ask questions and in general both groups required some minor clarification of what the task entailed. Most of the Ss in Group M were run individually while in Group S the majority were seen in small groups. All Ss made ratings of the standard set of inkblots taking them in order from I to X. The time required to complete the series of ratings ranged from 30 to 45 minutes.

RESULTS AND DISCUSSION

Ratings for each card on each of the 21 scales were tabulated separately for both groups and an analysis of directional trends was made. Ratings in positions one, two and three were combined as were ratings of five, six and seven.

The initial problem in dealing with these data involved the manner in which ratings of four on the seven-point scales were to be handled since they represented either neutrality with respect to the scale or the feeling that the scale was irrelevant. It was decided that if only a chance number of four ratings were made on a given scale, these would be disregarded and the directional trends of the remaining ratings would be subjected to further analysis. On the other hand if a significant number of four ratings were made on a scale, no further analysis would be carried out since a substantial number of Ss were not able to discriminate for that particular scale. Since 40 Ss used each scale and ratings can fall on any one of seven points, on a purely chance basis, approximately six ratings of four should be made. Using the chi-square technique it was found that as many as 11 four-ratings out of 40 represented a significant deviation (5%

level) from this chance base. Therefore, further analyses were restricted to those scales where fewer than 11 neutral ratings were made. For the remaining scales ratings of four were eliminated from the chi-square analyses. To determine whether a blot conveyed an impression characterized by the term at one or the other end of the continuum, observed frequencies were compared to the theoretical probability that, by chance, half the ratings would be in one direction and half in the other. The results of these analyses are reported in Table I.

The results in Table I indicate that some of the blots are viewed consistently by both groups. By characterizing each of the blots by the chosen extreme of scales on which significantly consistent ratings were made, it is apparent that Cards I and IV convey the strongest impression with both being evaluated negatively and being seen as having potent qualities. They also agree that V is a stimulus of low potency and with qualities suggesting activity. These particular results are in agreement with those found in a group of male students who used the same scales to rate the inkblots (Zax and Loisele, 1960). In many other respects, however, there are marked differences between the rating patterns of the present two samples and the college sample. Notably, the ratings of the latter group were consistent enough to result in nearly twice as many significant chi-squares as found for the present samples. One of the major factors to account for these differences is the fact that both the schizophrenics and the hospital non-psychiatric controls tended to use the neutral category (point four) more liberally than the college students. As a result of this tendency, in 157 of the 210 scales rated by schizophrenics too few ratings other than four were made to permit further analysis. In the case of the hospitalized non-psychiatric controls this occurred in 115 cases out of the 210 scales while for the college

TABLE I. Scales Yielding Significant Chi-Squares

	I	II	III	IV	V	VI	VII	VIII	IX	X
Beautiful-Ugly	ms ¹			ms						
Clean-Dirty	ms			ms						
Fair-Unfair								M		
Good-Bad				m						
Happy-Sad										
Kind-Cruel				m						
Wise-Foolish										
Brave-Cowardly										
Hard-Soft	M ²			M			m	m		
Heavy-Light			ms	MS	ms		m	m		s
Large-Small	M			MS	ms	MS			MS	
Masculine-Feminine										
Rough-Smooth	MS ²			MS						
Strong-Weak	M			MS	m					
Active-Passive	MS	S	MS	M	MS		S			M
Angular-Rounded	MS	ms	M		MS		s	ms		
Fast-Slow			M		M					
Hot-Cold										
Reckless-Cautious					m					
Sharp-Dull						m				
Tense-Relaxed	MS			M						

¹ "m" denotes that a significant number of the ratings of those in Group M were toward the right side of the continuum. "s" denotes the same thing for those in Group S.

² "M" denotes that a significant number of the ratings of those in Group M were toward the left side of the continuum. "S" denotes the same thing for those in Group S.

students it occurred in only 40 of the 210 scales. Perhaps because of this "conservatism" the present groups were overtly affected in a consistent way by only the blots conveying the strongest impression (I, IV and V). They failed, therefore, to evaluate blots III, VIII and X as favorably as did the college Ss. Interestingly enough, they also failed to consistently see any of the blots as being either predominantly masculine or feminine in nature.

To investigate the possibility that differences in rating patterns existed between the present samples, groups S and M were compared on the number of ratings nearest the left end of the continuum, the number of neutral ratings (position four), and the number nearest the right extreme of the continuum. The chi-square technique was applied to the 210 comparisons (21 ratings for each of 10 inkblots), with the result that significant differences at the 5% level were found on only 14 of the scales. Since, on a chance basis alone, 11 out of 210 would be expected to be significant, it was concluded that there were essen-

tially no differences between the groups in this respect. Similar analyses comparing the previously mentioned college sample to each of the present groups reveal significant differences between college students and Group M on 41 scales and significant differences between the students and Group S on 66 scales. Both of these figures represent significant deviations from the chance expectancy of 11 out of 210 significant differences and are significantly different from each other as well. A qualitative study of the distribution of ratings in those cases where significant differences were found between groups M and S and the college sample revealed that in nearly every case these differences could again be largely accounted for on the basis of the differential use of the neutral category with the college Ss making fewer neutral ratings. This pervasive tendency for both of the present groups to rate the blots as neutral with regard to a given scale is clearly illustrated by the fact that Group S made more four ratings than college Ss on 200 of the 210 scales while Group M made more on 191 of

the 210 scales.

Osgood, et al. (1957) have noted differences in personal "styles" in checking semantic differential scales. They have reported a study by Bopp contrasting the ratings of verbal concepts by schizophrenics and non-schizophrenics. The results of this investigation revealed that the schizophrenics made significantly more ratings in the neutral category and significantly fewer in intermediate categories than the non-schizophrenics. The differences in number of extreme ratings were insignificant. It was concluded that schizophrenics were far less discriminatory than normals in their use of semantic scales. Since these authors reported the percentage of responses made by each group in the extreme, neutral and intermediate categories it is possible to make direct comparisons between their samples, those used in this study, and the college sample referred to above. Comparative data for these groups appear in Table II.

From a simple inspection of Table II it is apparent that groups S and M differ relatively little from each other with respect to these response characteristics especially as compared to the differences found by Bopp. The greatest similarity between the present samples and those of Bopp seems to reside in the frequency with which the neutral category was used. The control groups made 29% and 30% of their ratings in category four and the two groups of schizophrenic Ss made 35% and 39% of their ratings in this category. The patterns of all four groups seem disparate from that of college Ss who made 67% of their

ratings at the intermediate points and distributed the remainder equally.

The results of the present study are in agreement with the observation of Osgood et al. that schizophrenics as well as certain other groups are characteristically less discriminating than college students in their rating behavior. In an effort to determine precisely what factors are related to this characteristic, groups S and M were divided into two groups each on the basis of educational level and comparisons were made within groups between those with the most schooling (averaging 14.6 years for Group S and 14.4 years for Group M) and those with the least (averaging 11.4 years for Group S and 11.2 years for Group M). Of the six resultant "t" tests, the only significant difference was between the best and the least educated of Group M on the number of intermediate ratings made. Consistent with what had been suspected, the best educated portion of the sample made the most intermediate ratings. The general trend in the comparisons which showed no significant mean differences was for the better educated groups to give fewer neutral and more intermediate ratings. Six more "t" tests were done to compare the best educated Ss in groups S and M to the college sample collected earlier. These groups differed in mean age by about 10 years in addition to the obvious clinical differences between Group S and the college group. These analyses yielded four significant "t" tests with the college Ss making significantly fewer neutral ratings and significantly more intermediate ones than the 20 select Ss in both

TABLE II. Percentages of Extreme, Neutral and Intermediate Ratings on Semantic Differential Scales of Several Groups

Group	N	% Extreme Ratings	% Neutral Ratings	% Intermed. Ratings
Schizophrenics (Bopp Study)	40	41	39	20
Schizophrenics (Present Sample)	40	22	35	44
Controls (Bopp Study)	40	36	29	35
Controls (Present Sample)	40	26	30	45
College Students (Zax and Loisel, 1960)	40	16	17	67

groups S and M. These findings would suggest that the response characteristics under investigation are related both to age and intelligence (as inferred from education). In any further efforts to explore this tendency it might be best to investigate the relevance of more subtle behavioral and emotional characteristics than were available in this study. If such factors could be linked to characteristic response styles, the basis would be laid for a new diagnostic tool which could be easily administered and scored, empirically keyed, and free of the transparencies of the more common personality inventories.

SUMMARY

Forty male schizophrenics undergoing their first hospitalization for an emotional disorder (Group S) and 40 male hospitalized non-psychiatric patients (Group M) matched with the schizophrenics for age and education rated the Rorschach inkblots on 21 Semantic Differential scales. The connotative meanings of the blots were deduced from those scales found to be rated in a given direction consistently enough to yield significant chi-squares. On this basis it was found that plates I and IV yield the strongest impressions as negative and po-

tent stimuli with V being consistently seen as low in potency and suggesting activity. Comparisons between the findings with these groups and with a sample of college Ss, tested earlier, revealed a marked tendency for the present samples to use the neutral category in their ratings. This confirmed a similar observation of Osgood, et al. Efforts to uncover the reason for such a response "style" suggested that further exploration of this point might best involve an attempt to relate subtle behavioral and emotional characteristics to response tendency.

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BOOK REVIEWS

De Martino, Manfred F., (Ed.)
Dreams and personality dynamics.
Springfield, Ill.: Charles C. Thomas.
1959, pp. 377, \$10.00.

Since the end of the second World War, a voluminous amount of literature has been published on almost every aspect of psychology. Yet, only a handful of publications have appeared in the area of dreams. This fact alone makes the present volume a welcome addition to the scanty list of books on dreams.

The present volume is compiled of various articles and monographs which have already been published in numerous journals. No new articles are contained. The editor has made a commendable attempt to systematize and cover as many varied aspects of dreams as is possible within the bounds of such a book. The book is divided in seven sections:

(1) Introduction; (2) Empirical and Statistical Studies; (3) Experimental and Theoretical Studies; (4) Personality Correlates of Dreams; (5A) Methods of Dream Analysis; (5B) Uses of Hypnosis; (6) Dreams and Projective Techniques; (7) Physiological Correlates of Dreams. Thus the book gives the reader a general although sketchy idea of what has already been done in the field of dreams and dream analysis and what promising avenues are still open for further investigation. However, as in all anthologies of this nature, the book suffers from the fact that it does not contain any section where these diverse studies are synthesized, although the book provides many such opportunities. For example, it is suggested that girls, as compared to boys, (chapter 2) and adult women, as compared to adult men, (chapters 3 and 4) have a greater number of dreams being chased, threatened, etc. However, there is no common thread that runs through these findings which suggest why females of all ages have more dreams of this kind and what such dreams may mean in the socio-psychological dynamics of the female individual. Further, there are many contradictions which emerge from chapter to chapter. For example, in Section 5B, (Use of Hypnosis), two sets of contradictory findings appear. First, it is definitely maintained that hypnotic dreams and regular night dreams are one and the same (Klein) while the other findings suggest that there is a basic distinction between these two types of dreams (Farber

and Fisher, Brenman).

Two sections are of particular interest for psychologists: Chapters 4 and 6 entitled, "Personality Correlatives of Dreams" and "Dreams and Projective Techniques." The former chapter clearly demonstrates how dreams can be utilized for psychological research, particularly in the study of personality typologies. However, practically all studies and researches which have been reported in this section, seemingly suffer from one basic theoretical flaw. In these studies, no distinction is drawn between latent and manifest dreams. Although all the studies deal with the manifest content of the dreams (where the subjects came the next day and reported their dreams as they remembered them) such dream reports have been treated as if the latent and manifest dreams were equivalent or interchangeable. And the conclusions which are drawn from the manifest contents are almost isomorphically translated to the latent contents. A more effective future contribution could result from distinguishing between latent and manifest dream material.

The section "Dreams and Projective Techniques" consists mostly of articles on the relationship between the TAT and the manifest dream contents. Such findings would tend to suggest, and possibly give some clues about, the level of personality structure at which one may attempt to interpret the TAT. Unfortunately, only one of the reported articles (Hedda Bolgar) attempts to show any relationship between the Rorschach and the dreams. One would have liked to see more articles on the Rorschach, since in theory at least a greater similarity is seen between the technique of interpretation of dreams and some aspects of the technique of interpretation of Rorschach, e.g., symbolism, projection of the self, etc.

Chapter 7, "Psychological Correlates of Dreams", is particularly enlightening and rewarding and should be read by all. It shows that the process of dreaming is highly correlated with eye movements which can be measured via E.E.G. Such eye movements, along with the body movements which the sleeper makes, are shown to serve specific functions in the dreaming process.

Another unusually stimulating and enlightening chapter is by Medard Boss, "Psychopathology of Dreams in a Schizophrenic and Organic Psychosis." As far as the reviewer is aware, not only is this the

first article which compares and contrasts the types of dreams of these two pathologies, but it also attempts to show in considerable detail that the dreams of various kinds of schizophrenics differ; e.g., the dreams of an incipient schizophrenic who is moving into full-blown schizophrenia are generally different from those of other types of schizophrenics, e.g., a reconstituting schizophrenic. The theoretical reasons for the differences in the structure of the dreams of various types and stages of schizophrenics are perspicaciously discussed.

Nevertheless, one feels a definite weakness in the book. Although the book attempts to cover almost every phase of dreams, it seems to leave out one of the fundamental areas—namely, how dreams are formed. Throughout the book, one gets the feeling that practically every chapter refers to, or assumes that the reader is aware of and familiar with, the theory of dream formation. Yet, nowhere in the book is this explicitly brought out, nor is a chapter on this topic included. It is probably true that since Freud's classic work on dreams, very little advancement has been made in this area, yet it might have been worthwhile to include a chapter on this topic.

One does feel a certain deficiency, or rather a bias, on the part of the editor in that, hardly any chapter or section is found which tells the reader of the "clinical use" of dreams. It is the reviewer's opinion that some fine articles which could have shown the clinical application of dreams have been left out. For example, Erickson's article on "Dream Specimens in Psychoanalysis" would have been an excellent addition. A few other minor omissions are felt by the reader. One such omission is that the book carries no bibliography either for the individual chapters included or for the entire book. The book therefore, does not fulfill its partial and implicit attempt to provide a correct perspective of the literature.

In spite of these lacks, the book is a worthwhile addition to the literature. It reveals both the diversity and breadth of the present literature, and those areas in the study of dreams needing additional investigation.

SOHAN LAL SHARMA
Los Angeles Psychiatric Service

Ledwith, Nettie H. *A Rorschach Study of Child Development*. Pittsburgh, Pa: Univ. of Pittsburgh Press 1960 pp. 1x - 336

This book is essentially a case presentation of eleven children selected from a random

larger group of children who had been tested repeatedly from six through eleven years of age. After an introductory section, a chapter is devoted to each child. In each chapter the author presents the Rorschach protocols of the annual testing, a brief history of the life situation at the time, and a blind interpretation of the Rorschach by co-workers in the original study.¹ In the concluding section, each of the interpreters reports on his method of making inferences from the Rorschach and the author gives a brief summary of some of the highlights of her findings on the general characteristics of children's records. The title of the book is a promising one. Unfortunately the contents, although valuable, are disappointing because they do not really fulfill the promise: the "Study promised in the title is missing. What is presented is a reporting of a series of Rorschachs with their interpretations and brief case history. The author writes as if the presentation of the series of Rorschachs with their interpretations and the associated life information is a study of child development whereas at best it is a picture of it. In the original publication the author also published a longitudinal series of Rorschachs to which this publication adds the blind interpretation of the Rorschach plus a slightly amplified life history with comments about the appropriateness of the Rorschach interpretation. It is interesting to read the series of interpretations made but no evidence is offered to verify many of the interpretations and nowhere in the book is there any reference to research or to the fact that there may be some questions as to the validity of some of the current ways of using the Rorschach. At times it seemed to this reviewer as though the author were confusing raw data with validity and assumed that presentation of such data is the same as the development of theoretical concepts from data. There are some statements that appear to suggest that having Rorschach normative data is the same as validating data.

On the whole, this book, in contrast to the author's previous publication, has a dilettante flavor in that it contains a little bit about the children, a little bit about the way some skilled people interpret children's Rorschachs, and a little bit about the author's findings about children's Rorschachs. Any of these areas, if explored in detail would be a contribution, but the small and

¹ See book review: Meyer, M.M. (Ledwith, Nettie. *Rorschach responses of elementary school children.*) *J. proj. Tech.* 1959, 23, 474.

unexplored sampling of them, robs the book of its real potential.

MORTIMER M. MEYER
Los Angeles

Nel, B. F., and Pelser, A. J. K. *The South African Picture Analysis Test (SAPAT)*. Amsterdam: Swets & Zeitlinger, 1960; pp. 74. Paper bound. Price with plates ca. \$6.50.

Reviewing the latest of an unending stream of subjectively-scored, unvalidated projective techniques offers a tempting outlet for one's hostilities. Thus, it is most frustrating to have to admit at the outset that the SAPAT makes a constructive contribution.

The 12 SAPAT stimulus pictures are on large, sturdy cards. Ten of the 12 are designated for boys and 10 for girls on the basis of expressed preferences. Story content of children was studied to decide upon the most desirable physical form of the "heroes." Seven of the pictures depict elves, two show mice in humanized situations, two present children in usual settings, and one depicts a royal family.

The authors seem to have accomplished their goal of filling the gap between the Childrens Apperception Test (CAT) (animal pictures) and the Symonds Picture Story Test (adolescents). Interest should be optimum for children from about five to twelve years of age. None of the pictures depicts anything culturally unique to Africa and all children are White.

Like the CAT each picture is distinctly drawn. It would appear that the clarity of the structure of the stimulus material would decrease the range of different needs that might be projected into a given picture. Thus, ambivalence would probably not be as clearly expressed in responses to the SAPAT cards as to the Symonds or TAT pictures.

The manual's introduction concerning differences between European and American conceptions of personality and projection may interest some. However, the final analysis of a protocol by the authors differs in no significant way from American analysis of TAT pictures.

The semiobjective scheme for analysis appears to be an eclectic American approach. It is designed "... as a clue for interpretation, and it is presumed that it ... compels the analyst to judge more objectively." Some examples of stories and interpretations are given in the manual. However, the neophyte should not expect to find a scoring

and interpretation scheme that dispenses with the intuitive skills of the clinician.

The reviewer must admit that the stimuli appear to meet the need for TAT type material for the grade-school child. A sound, objectively-scored projective test would have made a greater methodological contribution, but the clinical value of the TAT method is such that it deserves to be extended to all populations.

WILSON H. GUERTIN
University of Florida

Orr, Miriam *Le Test De Rorschach et L'Imago Maternelle*. (The Rorschach and maternal imago.) Paris: Groupement Francais du Rorschach, 1958, pp. 104, paper bound, 500 fr.

Miriam Orr's monograph deals almost exclusively with cards I, VII and X, as responses to these cards reveal the subject's imago of the mother. The explicitly stated hypothesis is that latent, prenatal engrams are in constant interaction with acquired ones and that particularly those engrams are evoked by the Rorschach which represent, in symbolic forms, the central features of very early object relations. The provocative assumption is made that children have an unconscious memory of their own body in the fetal state and some analytic case material is cited to support this. On this subject, the author's position may be summarized in her own words: "We have no proof, but think of the possibility of a localization of prenatal engrams in the neuro-vegetative system, while postnatal engrams could be localized in the cerebrospinal system." (p. 14, reviewer's translation.)

The need for autorepresentation is considered in relation to the repetition compulsion and it is suggested that the engrams of traumatic events will be particularly likely to be represented on the Rorschach.

Cards I, VII and X are considered for an assessment of the maternal image because Card I is assumed to evoke the engrams of "beginning", VII is thought to evoke the meaning of emptiness, of abandonment and sense of loss of support ("void shock" or "shock at emptiness"), while X provides an occasion for "shock at fragmentation" to manifest itself. (The interesting question of how to differentiate the "shock at fragmentation" on X from color shock is raised by Orr but is by no means settled. Only it is suggested that because of the changed child rearing techniques, color shock is by no

means as frequent today as it was in the days of Hermann Rorschach.)

The rationale is advanced that above and beyond the shock at the "beginning", at emptiness and at fragmentation, the lack of internalization of the mother will result in a devitalized Rorschach. Devitalization is seen as a relative matter, reflecting greater and greater distance from the top of the evolutionary ladder. The less "chaleur vitale," the more devitalization there is in the record. Orr points to the possibility of a highly interesting content analysis along the guidelines of the evolutionary scale. For example, in such an analysis, fish would score lower than mammals but higher than moss, and in the end we would obtain a score that would represent the amount of "life force" in the record. No statistics are offered, but this method was apparently found to discriminate between schizophrenics and neurotics.

While the American reader is not used to encounter the order of substantiation that Miss Orr uses, and might react with annoyance at claims of validity on the basis of vaguely defined clinical experience (and this under circumstances where data could clearly have been presented without too much trouble), there is also rich reading for those who will approach the material from a purely theoretical and even aesthetic standpoint. Miss Orr's general knowledge of oriental philosophy, art and literature is readily available to footnote certain points, and there is a measure of delight in reading about Indian religious symbols in relation to scoring examples. This is not often found in American psychological journals. The clinical examples were selected from a large pool of records obtained from a wide variety of subjects, of different pathologies and nationalities, some condemned to die, some tested in D.P. camps. The monograph contains the responses to Cards I, VII, and X of several of the defendants of the Nurnberg trials.

One would wish that Miss Orr had turned more of her attention to the formal aspects of the responses, because she focuses entirely on content. Her monograph would be of more use to other researchers if her method of selecting her subjects and the responses were made public. Ordering the material along the evolutionary scale lends itself eminently to some statistical treatment which would not necessarily have to encroach upon the artistic and imaginative in her work. Her hypoth-

eses stand quite well without the assumption of prenatal memory.

MARY ENGEL
Michael Reese Hospital

Zulliger, H. *The Behn-Rorschach Test*. Hans Huber, Bern: 1956, 200 pp.

This text by Hans Zulliger is not a new book, but rather it is a translation (translator unnamed) of a work in German which was originally copyrighted in 1941. Ostensibly a manual to accompany the Behn blots, the book has very little to do with the "Bero" inkblots as such, but it is more like a combination casebook and notebook on "form interpretation tests", with the focus happening to be upon the "Bero" blots. The book might better have been titled "Zulliger at Work."

The Bero ink blot series was worked out in 1920 by Dr. Hans Behn-Eschenberg, assistant physician under Rorschach at the Herisau Mental Hospital. We are told merely that "With the help of his teacher and chief, he painstakingly chose, from a considerable number of inkblots, the present 10 plates as the most appropriate. They were standardized against the plates of the Rorschach series". The blots were apparently never printed until the original publication date of this volume, 20 years after they were developed.

The reader who approaches this volume looking for standardization data, normative tables, reliability coefficients, or validation studies, or for any of the usual statistical paraphernalia we expect in a test manual will be severely disappointed. There is none. There is a listing of about 500 responses, broken down by Bero card location, and scored by Zulliger. These are frequently appearing responses, but Zulliger cautions against using these as a "pure answer table".

Also the reader who approaches the volume looking for detailed comparisons between the Bero and Rorschach blots will be disappointed. About two pages are devoted to indicating certain differences which he finds in the two series, but the differences are minor in nature. Zulliger's clinical experience indicated that the blots constituted a parallel series, and for him (in 1941) this was sufficient. When the results were not parallel, it meant the subject was a labile individual, and the differences in response to the two ink-blot series suggested something of the changeable nature of his personality. In fact

Zulliger recommends using both series just for the added depth of analysis the comparison sometimes provides.

The bulk of the book is devoted to his scoring system (little advanced from Rorschach's), to interpretations for the various scoring features, and for combinations of these features, and to case studies which demonstrate Zulliger's virtuosity as a clinician. Many of the interpretations, referring to both Bero and Rorschach blots, will be familiar to an older breed of psychologist who still scores the Rorschach test, but they will appear quite novel to moderns who interpret test content only. The manner in which Zulliger develops interpretations based on combinations of features, or modifies the significance of test features in different contexts, should give pause to, and intrigue those researchers who still tabulate Ws, Fc's, A % etc., run simple statistical tests, and thus arrive at conclusions. While more in the nature of notes than exhaustive system, Zulliger's version of "holistic interpretation of the formal scoring" seems to me to be among the most articulate to be found. If one were interested in deriving a "cookbook" for ink blot tests, Zulliger's manual would be an excellent place to start.

This text is consciously atheoretical. Interpretations are asserted, but no particular personality theory is employed in interpretation. The rare "psychoanalytic" interpretations startle one by their infrequent appearance. Zulliger describes character, intellectual characteristics, emotional traits, vocational skills, and offers occasional diagnostic hints, although his avowed purpose is to avoid "medical (psychiatric-neurological) diagnosis". Zulliger's interpretations and comments are neat, sensitive, and often stated in highly picturesque terms. He is obviously a keen observer, and his all too brief comments on intellectual types in particular are quite worthwhile, especially if read in light of current interest in "styles" of thought.

While the material is incomplete, and scattered, there is stuff of interest here, even though the volume is some 20 years old. Zulliger, one of Europe's foremost clinicians, and author of a three card ink blot test (compare with Holtzman's 40 card test!), is worth "watching at work".

MURRAY LEVINE
Devereux Foundation Institute for
Research and Training
Devon, Pa.

ANNOUNCEMENTS

We regret our oversight in not crediting the photograph of Bruno Klopfer in his earlier mood to the photographic skill and generosity of L. Joseph Stone, our Eastern Representative. Dr. Stone presented an enlargement to Dr. Klopfer with a fitting comment at the annual Society Banquet in Chicago.

MEMBERSHIP DECISIONS

The board of trustees is pleased to announce the following membership decisions.

Fellows:

Himelstein, Philip	Ross, Alan O.
Osterweil, Jerry	Wilensky, Harold

Associates:

Barclay, Allen	Mills, David H.
Craddock, Ray A.	Mock, Joe F.
Cryns, Gerd M.	Philip, Anthony F.
Farley, Jane	Tyrrell, Marcel J.
Fisher, Emanuel	Van West, Joan
Greenstein, Jules M.	Vassiliou, Vasso
Guze, Vivian S.	Wells, Hal M.
Kornrich, Milton	Wilson, Helen E.
Levy, Joshua	Yaeger, Marion
Lyon, Waldo B.	

Affiliate:

Mierzwa, John

Student Affiliate:

Fuchs, Arnold	Mansfield, Lucile H.
Klein, Milton	Schwartz, Lita L.

WORKSHOP

University of California Extension announces its second residential workshop on "Introduction To Analytical Psychology For Clinicians". The first workshop, held in 1959, was highly successful, and there have been many requests for this second conference.

The conference will be held at the Asilomar Conference Grounds, Pacific Grove, California, 6 miles from Carmel and 125 miles from San Francisco. It will begin Saturday evening, June 3, 1961 and conclude Thursday noon, June 15, 1961.

The conference is aimed at teachers and supervisors in graduate departments of Clinical Psychology and in residency or internship training centers who want to include competent information about the Jungian approach to clinical work in their program. The conference does not form part of a training program for Jungian analysts or research workers. It serves as an introduction which should provide the kind of information which cannot be acquired through reading alone.

The prerequisite is a Ph.D. or M.D. degree or equivalent in professional experience, and consent of staff.

The staff consists of Bruno Klopfer, Ph.D., (Coordinator); Rivkah Kluger, Ph.D.; Joseph Henderson, M.D.; and Marvin Spiegelman, Ph.D.

The conference is designed so that all students will participate in three seminars of 20 hours each.

Seminar 1: Basic Concepts (Dr. Klopfer and Dr. Spiegelman)

Seminar 2: Amplification (Dr. Kluger)

Seminar 3: Clinical Approach (Dr. Henderson)

The enrollment fee is \$95.00. A limited number of \$50.00 tuition scholarships will be available. Information concerning veterans benefits will be supplied on request.

Participants and their families may stay at the Asilomar Conference Grounds or at motels within walking distance.

For application form and brochure giving complete details on the conference and housing facilities write to Department of Social Sciences, University Extension, University of California, Los Angeles 24, California. Enrollment is limited. Enrollees will be selected in the order in which applications are received. The deadline for receiving applications is May 1, 1961.

BOOKS AVAILABLE FOR REVIEW

Hiltmann, H. Kompendium derpsychodiagnostischen tests.

Peatman, J. G. & Hartley, E. L. Festschrift for Gardner Murphy.

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